AMERICAN GAS ASSOCIATION MONTHLY

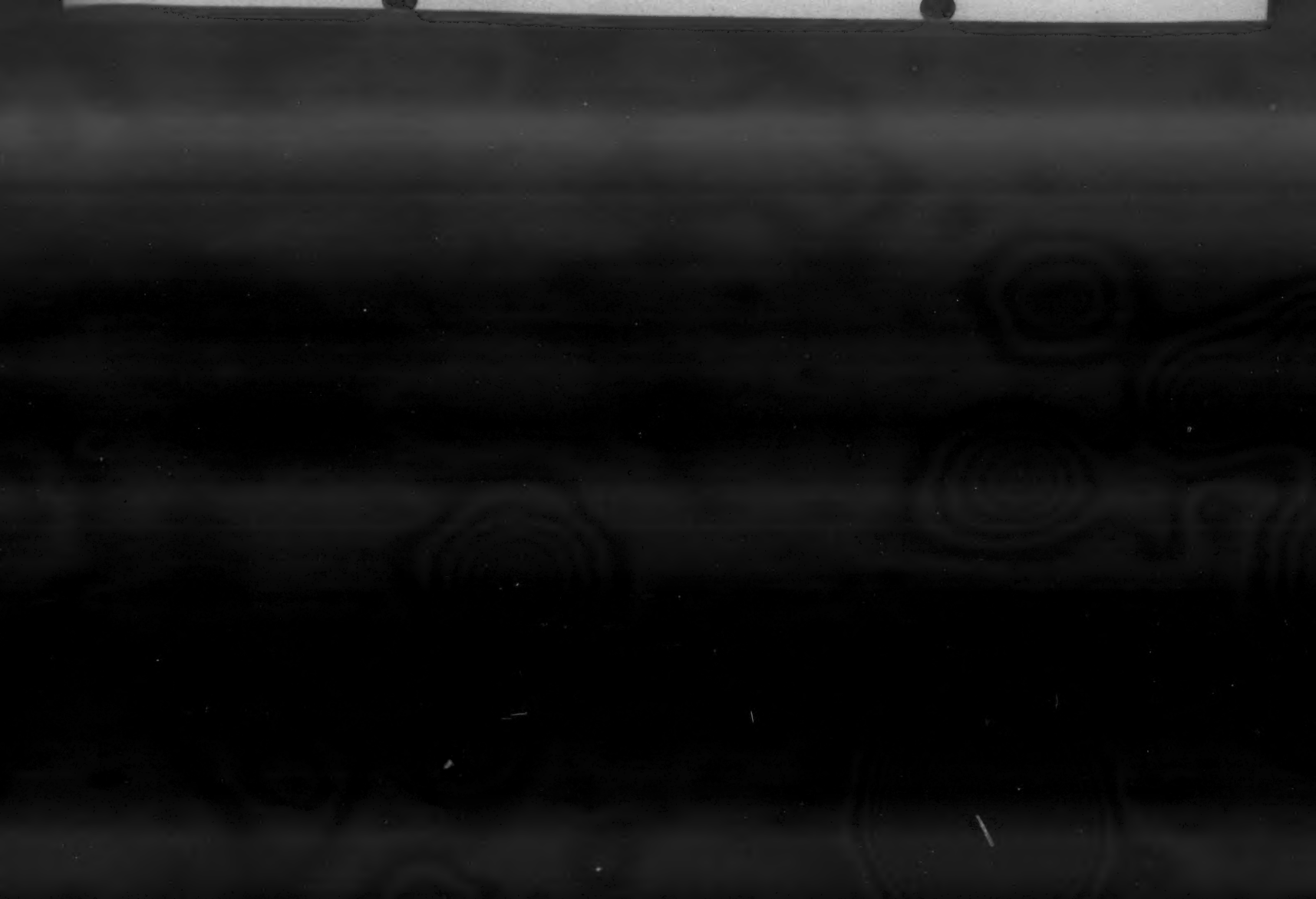
Vol. V No. 7

JULY, 1923

"It makes little difference to gas companies who makes the right thing possible, so long as it is right."

—A. S. HARRINGTON

SOME of our members have suggested that it would be more convenient if the size of the Annual Proceedings were changed to that of the Monthly. Many associations have so unified their publications and such a change presents many advantages. We believe that the majority of our members would approve of such a move and we would be glad to hear their opinions on such a change.



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FOR STATEMENTS AND OPINIONS CONTAINED IN PAPERS AND DISCUSSIONS APPEARING HEREIN, THE ASSOCIATION DOES NOT HOLD ITSELF RESPONSIBLE

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The Good-Will Chain

A chain is only as strong as its weakest link, is a well-known proverb, universally accepted.

And these weak links have what effect on the whole? You answer readily. Why, they weaken the chain as a unit. They reduce its total effectiveness.

But have you ever considered whether these weak links can or do affect the strength of each of those separate stronger links as well as impairing the effectiveness of the whole chain? They can and unfortunately do in many cases.

Let us consider, as an instance, the chain of Public Utility Good-Will.

Public Utility Good-Will is a chain made up of links representing every public utility company in the country. Each such company is a link. Upon each company link and its strength depends the strength of the whole chain. But there is even more than that.

It is universally recognized that the people of our country are nomads—traveling here and there, frequently changing their abodes from one part of the country to another. And there is the crux of the whole matter. Consumers of one company, a weaker link in this chain, move to the territory of a stronger link company. But they carry with them their prejudices against the public utility, their warped ideas of its aims and purposes, possibly even their misconception of its honesty and integrity and they straightway apply these beliefs against the company which is to serve them.

No matter how strenuously this latter company may have worked to build up its link in the Good-Will chain, it suffers at their hands a great handicap for which the weaker link is directly responsible. And through this feeling of these new consumers its good-will work is hampered and weakened—the strength of its own link is lessened.

For the strengthening of the entire chain—in justice to these strong links—for the good of the whole industry, every company should make every effort to strengthen its own link in the Good-Will chain.

AMERICAN
GAS ASSOCIATION
MONTHLY

Vol. V JULY, 1923 No. 7

Public Utilities and Public Relations*

FRANCIS H. SISSON, Vice-President, Guaranty Trust Company, New York, N. Y.

THE PROBLEM of the public utilities today is very largely a problem of public relations. Politics, rather than economics, are often the deciding factor in their solution, so it has become necessary for public utility companies to consider this angle of public relations as it bears upon their operations quite as carefully and intelligently as their merely mechanical, financial, or legal problems. The ever-increasing tendency toward regulation of business activities in a democracy has made it particularly imperative for those businesses immediately concerned in the public service to give careful heed to public sentiment and its expressions, so the conclusion is inevitable that sound publicity advice is as essential to the successful operation of public utilities as competent engineering or financial direction. Here is offered a field for useful service to the advertising and publicity expert of major importance. The double task of making clear to the public the rights and necessities of these utility companies and of translating to the management of these companies a fair statement of the public interest, is a difficult one, but none the less one promising rich reward in both public and private interest.

One of the most interesting and important developments of advertising has been the growth of its informative, educational and institutional phases during recent years. Advertising first established its place as an economic factor as a sales aid, but as understanding and use of it have increased, its capacities for service in other fields have developed until today we find it employed in many forms of service hitherto unthought of. Its usefulness in the sale of ideas, as well as commodities, has been proven in many ways.

A tremendous stimulus to this develop-

*An address delivered before the Public Utility Advertising Association at the Convention of the Associated Advertising Clubs of the World, Atlantic City, N. J., June 5, 1923.

ment was furnished by the war and the necessity it created for a broad public understanding of national duty and opportunity which that crucial situation presented. The successful prosecution of the war made it necessary that we should sell to the American people, not only the bonds by which it was financed and the charitable contributions by which its hardships were ameliorated, but also to convince them of the necessity of the draft, the need of thrift, the demands of personal sacrifice, the power of loyal cooperation in a great common cause and of supreme national endeavor, that world peace might be restored. The force of organized publicity during those trying days brought about a mental and spiritual transformation among our people, and the devotion to principles and ideals which it would have been impossible to create without its use. It served the purpose of welding a somewhat heterogeneous and loosely organized people into a thunderbolt of power which turned the scale for civilization. No nation could experience this awakening process without stimulating its mentality, without quickening its imagination, without enlarging its vision.

Selling Ideas to the Public

From that experience we have emerged with a new realization of the power of the printed and spoken word in the sale of ideas, and with the increasing belief that the issues of peace may be brought home to our people as convincingly as the issues of war through the intelligent use of this great force. Indeed, I am confident that the day will come when it will be thought necessary to present the merits of every issue of paramount importance before the electorate in some form of advertising. If the way could be paved before action by information and understanding, how much fewer would be our sins of economic and political commission and omission. If a new and progressive idea seeking acceptance, or an old and sound idea seeking support, could be presented to the consuming public with the same strength of appeal that a new commodity commands, how much greater chance of prevailing it might enjoy. Even as advertising reached and stirred our souls to sublime sacrifices, so it may guide our minds to accurate judgment and rational acts, for the appeal of advertising can be made both to the feelings and the reason, and response and conviction measure the strength of its appeal.

In the broad problems of public relations which arise in a democracy advertising can be employed with great power to serve useful ends. In spite of the fact that its powers are in many respects limited by the limitations of human nature, and that it is difficult to make of it an exact science, constant progress has been made toward its more scientific use. In many of the complicated relations of modern society its utility has already been clearly established. Many problems of public regulation and legislation furnish an opportunity for advertising service, as is bound to become increasingly apparent. One great American economist has styled us "a nation of economic illiterates, and our own Josh Billings aptly wrote that 'The trouble with the American people is not so much their ignorance, as the tremendous number of things they know that ain't so.'" To the diminution of that economic illiteracy and the lessening of the number of things which the public knows that "ain't so," advertising can be helpfully employed.

Consider for a moment what we may

expect in default of proper public understanding of the vital economic questions pending before this nation today. Recall how near we came to authorizing by popular vote a debased currency during the free silver campaign; how long we temporized with our critical banking problem; how foolishly we have hampered and shackled our large industrial institutions in their legitimate expansion and beneficial economic functions; how we have over-regulated and strangled our railroads; how we have blundered in our taxation.

All these and many more similar situations demand the light of fact and reason to dispel the shadows they cast upon us. The inevitable harvest of ignorance is industrial and social disaster. Public sentiment must be informed and guided if it is to find expression in proper action.

It is certain that never in the history of this country was a knowledge of economic facts more imperatively needed. New and large business problems confront us. The civilized world is undergoing an economic readjustment. The nation which best understands the facts and the principles underlying them will profit most largely, and the nation which takes the most intelligent advantage of advertising, in its manifold forms, both as a medium of education and as a potent factor in building the business of the future, will prosper most.

The Call to Duty

There lie before advertising and advertising men not only the opportunity for service and profit, but the clear call to duty. There rests upon our business and industrial leaders the distinct responsibility to state and explain the facts and principles upon which national business progress must be built, through the printed and the spoken word, so clearly that he who runs may read, and that oft quoted "man in the street" may understand. A large and constantly increasing reading public seeks eagerly to know, and it is the mission of the publicist to inform and advise them through all the mediums at his command. To fulfill that mission, we must call to arms the vision of the promoter, the courage of the explorer, the keenness of the trader and the wisdom of the student. They must all be conscripted to this great service and contribute their part to the common cause, and they are all the proper attributes of the efficient advertising man of today.

That day has long passed, if indeed it ever existed, when advertising, under proper conditions, can be considered as an experiment or a speculation. It has long since become a demonstrated economic factor as a business builder and a clearly proved educational force. That it may not always, in all hands, operate with 100 per cent efficiency is no more a proof of its failure than an unsuccessful operation on the human body by a horse doctor would be a proof of the failure of surgery. Its call is for skilled men, broad men, who have thoroughly mastered the tools with which they must work, whose sense of public psychology is sure and true and whose vision of national opportunity is as broad as the world.

A well-equipped advertising man in institutions whose public relation problems are important should be able not only to interpret the public's mind on matters pertaining to the business of his institution, but to its officers. In this two-fold capacity he should first of all be a sound psychologist, and the importance of this capacity for accurate psychological analysis as a chief factor in advertising ser-

vice is becoming increasingly understood. The complexity of human thought and feeling presents a real problem to such an analyst, but the measure of his success will be very largely the measure of his ability to interpret and direct these motive forces of human action. He must understand the value and place of emotional appeal, as well as the logical argument; neither by itself carries a complete message. He must understand the varying appeals to the sexes, and to the classes with whom he must deal, in terms of display, color, argument and feeling. He must always stand aloof from his problem and have a detached point of view, which will give him perspective and an angle of accurate appraisal which he could not otherwise have. He should understand economics and politics, production and finance, as well as distribution, for in all of these fields there are factors operating which affect his message. To mix a metaphor, he should be both the mouthpiece of business to the public, and the mirror of the public mind to business. He should have the contacts in the business world which enable him to understand its problems and the public contacts which provide a hearing for his suggested solution.

Basis of Public Understanding Necessary

The competent advertising man of today must know not only how to sell his offering on a basis immediately attractive, but also how to establish good will values for trademarks and ideas which will be reflected in future profits. For, in the final analysis, in any modern business that is organized for profit, only those efforts which are reflected sooner or later upon the right side of the balance sheet can be justified, and that end must never be lost sight of. But underneath all our efforts, either direct or general, there should be the appreciation that business must rest upon a basis of public understanding for its final stimuli and ultimate profits, and that business can prosper only permanently upon a basis of sound economics, some of the obvious elements of which may briefly be mentioned as a sound banking system, serviceable public utilities, adequate transportation, a respect for the constitutional rights of private property and the freedom of initiative.

Present Position of Utilities

Fortunately for the country, we find the present position of our public utilities generally satisfactory, marking a great improvement over recent years. Earnings in 1922 were notably better than in 1921 and earnings for the first quarter of this year have been, for the most part, running well ahead of the first quarter of 1922. It is fair to state, however, that from this point forward the outlook is more uncertain. If prices generally are to turn downward or are to stabilize, at or near present levels, earnings will continue, in the main, satisfactory. If, as seems possible, prices and operating costs are to rise further, public utility earnings may decline, while it is possible that rates may be advanced somewhat in response to increasing costs; but rates usually follow costs upward laggardly, rather than lead them. From that viewpoint, it seems likely that the prices of public utility securities may have passed their peaks on the present movement, and that the market of the past year cannot be accepted as an average market, nor conclusions based thereon. Some of the unfavorable factors bearing on the near outlook of these companies are:

1. Present margins of profit, although

actual, are not wide. They may be easily disturbed by increases in any one of the cost factors.

2. The general trend of labor, equipment, and repair costs is upward.

3. The problem of getting higher rates is a difficult one. Action by the public service commissions or other regulatory bodies is rarely satisfactory, either in granting quick relief, or as to the amount of rate increase allowed.

4. Traction companies are meeting increasing competition from the family automobile, the jitney, taxi, and bus lines, especially in suburban traffic.

A quickened realization of their dependence upon and responsibility to public sentiment by the managers of public utility corporations on the one hand, and an increasing appreciation by the public of the importance of protecting private capital engaged in these enterprises on the other, have brought about an improved situation in this field during the past few years, but there is still a long distance to go before the situation is an entirely fair or happy one. In the development of that much to be desired situation, the well equipped advertising and publicity man can be of great service to both parties. And a frank statement of the essential facts regarding utilities and its repeated presentation through all the publicity mediums available is the first and obvious remedy of the situation, but going even further than that, an interpretation of the currents of political thought must be made and the constituent elements of public sentiment must constantly be studied, if the public utility corporation is to be rightly guided. There is so much that is faulty in the functionings of a democracy that there will always be much to criticize and to complain of. Our only reassurance in such a contemplation is that, whatever may be its weaknesses or failures, democracy still constitutes the best form of government which has so far been tried with any degree of continuing success, and our problem is to make our adjustments to it with as little friction, as much profit, and as large a degree of service as possible. In the pursuit of that political philosophy, the problem of our public utilities in their public relations becomes one of establishing mutual understanding, mutual concession and mutual respect for the rights of others.

Supreme Court Decision in Southwestern Bell Telephone Company Case

This decision of the United States Supreme Court, which was printed in full in Service Letter No. 42, June, 1923, has also been printed in full in the June 7th issue of Public Utilities Reports and an analytical note, dealing with the various points raised by the decision, was carried in the June 21st issue of this same publication.

One Kind of Public Service Corporation

This is an article which appeared in "Our Neighbors at Kendall Square," a little booklet published by The Murray Printing Company, Kendall Square, Cambridge, Mass. It is a striking example of good will as it should be. (EDITOR'S NOTE.)

SUPPOSING you had worked for one company for over fifty years, and supposing that for many of those years your job had been a seven-days-a-week job, and supposing that during this time you had taken but one vacation of any length, wouldn't it give you a grand and glorious feeling if one day you were to receive a letter as follows:

Dear ——,

In recognition of your long and faithful service, covering a period of more than fifty years, and in consideration of your infirmities, the directors have voted to retire you from active service and put you on the payroll as an honored pensioner at three-fourths of your regular pay, the same to begin on December 16, 1920, and continue for the rest of your life.

Trusting you may be spared and blessed with good health to enjoy your well-earned rest for many years to come, and assuring you that we shall always be glad to see you either at the works or at the main office, I remain, with warm personal regards

Yours sincerely,

THE PRESIDENT.

Doesn't it make you glad even to merely know that such a letter actually was written? Doesn't it please you to know that such a long service actually was rendered? And now, perhaps it will make you feel even better to know that the story is part of the history of a public service corporation.

Of course, it is great fun to find fault with public service corporations, to complain about their autocratic methods, and to abuse them now and then, but when all is said and done we know very well that they are no different from other business corporations. We know that, like other business organizations, they are made up of men who are not a bit different than you or we.

But, naturally, there are public service corporations, and again, there are public service corporations. Our local gas company is one of the better sort, we would even say one of the best. The term "public service" means all that it says when applied to the work of this corporation. In its whole history this company has never been ordered to reduce the price of gas, either by the old Board of Gas and Electric Light Commissioners or by its successor, the Department of Public Utilities. Since July, 1920, when the price was $1.60 per thousand cubic feet, the Company has voluntarily made four reductions, bringing the price down to $1.25. The Company is that kind of a public service corporation.

Since January 17, 1853, when gas was first turned on in Cambridge, the Company has maintained constant and uninterrupted service to its customers. Think of what this means! Not for so much as half an hour throughout a period of seventy years has this Company failed to deliver gas to its customers! The Company is that kind of a public service corporation.

The Cambridge Gas-Light Company is one of the oldest gas companies in the Commonwealth. It was in 1852 that the persistent and growing demand for gas service in Cambridge developed into action. Thirty-six years previous, the first gas plant in the country had been established in Baltimore, followed by one in Boston six years later. In 1852 an act of the General Court gave authority to Charles C. Little, Isaac Livermore, Gardiner G. Hubbard, their associates and successors, to form a corporation for the purpose of manufacturing and selling gas in the city of Cambridge. This act was passed in the House March 11, 1852, ratified by the Senate two days later, and signed by Governor Boutwell March 15, 1852. The legislation met with some opposition, and one citizen wrote to the Cambridge Chronicle warning of the danger to trees from gas mains, and suggesting that the Washington Elm would not live long after pipes were laid near it. We do not know whether the citizen is still with us or not. The Washington Elm still flourishes.

That affairs sometimes moved quickly even in those days is evidenced by the fact that the construction of the plant began Aug. 9, 1852, and gas was turned on January 17, 1853. The original plant was located bordering on the Charles River at the foot of Ash street, near Mount Auburn street. An eight-inch main was laid from the plant to Harvard Square, from which six-inch, four-inch and three-inch pipes ran to other points of the city. The original system had five miles of main. Today the system comprises one hundred and eighty-three miles of main!

Almost immediately after the Company began manufacturing gas, demands for gas service came from parts of Somerville, so that in April, 1853, an act of the General Court gave the Company permission to extend its mains into the town of Somerville. Since that date the Company has supplied that part of Somerville lying south and west of the old Boston & Lowell Railroad.

In 1870 the Company moved its plant to Kendall Square, thus showing progressive inclinations so early in its existence. At that time the land now occupied by the extension works of the Company was covered twice a day by the tide, which frequently came up as far as the railroad crossing on Main street. The erection of buildings on this site was a big undertaking for those days, and this great industrial centre owes much to the Cambridge Gas Light Company for its pioneer work in developing this property.

The plant occupies approximately seventeen acres, bordering on the Broad Canal, extending from First street through to Third street and back to Munroe street and including a block on the other side of Third street. Four gas holders on the property have a total capacity of approximately ten million cubic feet.

The illustration on page four gives a good idea of the size of the plant, although showing but a part of it. A very modern coal-handling apparatus is seen in the foreground. The steel telpher supports a monorail upon which electric pick-up buckets carry the coal wherever desired. This system extends to all parts of the yard and through the sheds and retort house. Elevators and coal crushers are installed at each end of the system. This picture shows only the facilities for handling coal delivered by rail. The same facilities exist for handling water-borne coal which is brought up the canal. The canal is at the left viewed from the

point from which this picture was taken. About eighty-eight thousand tons of coal are consumed annually.

It is interesting to note the growth of the Company's business. The amount of gas sold has increased from 68,000,000 cubic feet in 1877 to 1,226,000,000 in 1922, and the number of customers has increased in the same time from 4,600 to 44,500. Although it was freely predicted that electricity would eventually drive the gas companies out of business, this growth has continued steadily in late years, despite the increasing use of electricity, which seems to prove beyond contradiction that each has its place in the world.

The Company has had eight presidents since 1852, but for the past twenty-three years it has been under the active management of Mr. Albert M. Barnes. To him may be justly attributed the present flourishing condition of the Company's affairs and the good-will it enjoys throughout the cities it serves. Mr. Barnes is a man admired by all who come into contact with him, a broad-minded, far-sighted, splendid type of forward-looking business executive. He has always insisted upon courtesy and promptness in all the Company's dealings with the public and has ever laid emphasis upon service. If he had never performed any other work he might rest content in the knowledge that due to his guidance this great public service corporation enjoys the friendship of its customers and of the community-at-large. Mr. Barnes has acted as general manager since 1900, and was first elected president, January 2, 1923. The other officers of the Company are Walter F. Earle, vice-president; Vinton W. Mason, treasurer, and Isaac T. Haddock, superintendent.

The Cambridge Gas-Light Company is the largest tax payer in Cambridge and also pays large taxes in Somerville. It gives employment to three hundred and fifty people, many of whom have long records of service. One who is well known to everyone at Kendall Square is Robert G. Law, foreman of outside construction. Mr. Law has served the Company and the community faithfully for forty-six years, having started as an errand boy in April, 1877.

We are glad to have the Cambridge Gas-Light Company for a neighbor, and we are sure that everyone at Kendall Square is glad to have the Company's plant located here. It is the kind of a public service corporation that is a credit to any city, and its presence here adds one more to the list of Kendall Square corporations which are noted for their progressiveness and for their willingness to work together for the good of the neighborhood.

Buy and Store Your Coal Now

The Association wishes to emphasize the recent request of the Joint Fuel Committee sent out under date of May 28th. The active support of all companies is requested in:—

1. Completing their annual contracts for their expected requirements at the earliest date possible.
2. Storing coal at once to the limit of capacity.
3. Promptly unloading all coal cars and freeing the sidings so as to reduce car shortages to a minimum.

GENERAL

CHAIRMEN OF GENERAL COMMITTEES ORGANIZED TO DATE

Accident Prevention—F. W. Fisher, Rochester, N. Y.

Amendments to Constitution—Wm. J. Clark, Mt. Vernon, N. Y.

American Engineering Standards Committee, Representative on—A. H. Hall, New York, N. Y.—(Alternate Representative) W. J. Serrill, Philadelphia, Pa.

Representatives on Sectional Committees—Underground Construction—National Electrical Safety Code—C. C. Simpson, New York, N. Y. Illumination, Nomenclature and Photometric Standards—W. J. Serrill, Philadelphia, Pa. Ventilating Code—Geo. E. Bennett, New York, N. Y. Safety Code Correlating Committee—W. R. Addicks, New York, N. Y.—(Alternate Representative) Donald McDonald, New York, N. Y.

Award of Beal Medal—R. B. Brown, Milwaukee, Wis.

Chamber of Commerce—D. D. Barnum, Boston, Mass.

Cooperation with Educational Institutions—C. N. Chubb, Davenport, Ia.

Customer Ownership—Chas. A. Munroe, Chicago, Ill.

Finance—James Lawrence, New York, N. Y.

Gas Safety Code—W. R. Addicks, New York, N. Y.

Gas Standards—J. B. Klumpp, Philadelphia, Pa.

Geographic Sections—L. R. Dutton, Jenkintown, Pa.

National Fire Protection Association—R. S. Doull, New York, N. Y.

Nominating—C. M. Cohn, Baltimore, Md.

Rate Fundamentals—R. A. Carter, New York, N. Y.

Rate Structure—T. V. Purcell, Chicago, Ill.

Standard Gas Appliance Specifications—W. T. Rasch, New York, N. Y.

United States National Committee of International Commission on Illumination, Representative on—Howard Lyon, Gloucester, N. J.

Follow Thru

J. K. SWANSON, Consumers Power Co., Jackson, Mich.

GOING some, I'll say. Thanks for calling. I am with you."

"Mr. ——, your Service Man, called yesterday and to-day your office 'phoned my wife to inquire if the water heater was O. K.. This is *real service*. We want you to know that we appreciate this follow-up method."

"Hello, is this you, Mr. Hickman? You fellows at the Gas and Electric office are surely stepping on this 'Service stuff.' We expected you to take care of the complaint. We did not expect your man to drop in the following day to see if the washing machine was performing properly. Where did you get the idea? It's a good one. Working on this basis the town will be yours in five years. Such consideration is quite unthinkable coming from a Public Utility Company."

The original of the above quotations are filed in our office together with hundreds of others just as complimentary. This unusual "come-back" from our customers is not the result of any expensive publicity department functioning through cleverly written and catchy appearing ads in which attempts have been made to build up favorable sentiment and indirectly secure a friendly slap on the back. These remarks come from customers—our customers—who have actually felt the heart throb of a large Public Utility Company in a language which is perfectly understandable. Our advertising, on the whole, has been and is commendatory. Yes, even attractive, but in the final analysis more or less meaningless because we have not worked our story into the warp and woof of our daily experiences. In other words, we have been talking an advertising language which our customers do not take the time to understand. Why not save a large portion of this publicity ex-

pense and spend it in a more intelligent and personal manner and by more direct methods?

Have you not gone into hundreds of Public Utility Commercial offices and noticed neatly and artistically arranged and framed the words "COMPLAINT DESK?" So attractively were these words set up that if you had no idea of making a "complaint" you felt intuitively impassioned to do so in order to be accommodating. Have you not sat in a dozen or more conferences and been asked for a better word to convey to the public the purpose of this niche of space in your office known as the "Complaint Desk?" Have you not attended a dozen or more conventions and heard experienced men say, "See that shop orders on complaints are executed with promptitude and reported back—*completed*. If you fail to do this your Company is not fulfilling its obligations to the public." One can almost hear the clank of the ball and chain by the austerity exposed in the speaker's manner of developing this subject. His motives were all right but his heart had become cold by years of automatic operating experiences. In other words, he had lost his personal touch with not only the public but also his own employes. They, too, had become mere automatons.

But why make such an arduous task of handling such a valuable asset, viz: "A complaint." There is not a word in the Public Utility man's vocabulary with which he can better afford to conjure than the word "complaint." Do not try to kill it. Do not even stifle or snub it. It is the very touch-stone upon which the Public Utility Company must eventually enter into its Promised Land. Nurture and feed it but, for heaven's sake, do not kill or smother it.

Have you not observed that the successful golf player has acquired the ability to "follow through" with his stroke? Did you ever see a well executed tandem play in a foot-ball game? Have you not been thrilled by the precision with which the quarter-back followed through with his interference and advanced the ball several yards? In a base-ball game, have you not often seen the runner on first base caught out before reaching second, but regardless of that experience he followed through to second in order to complete the rules of the game?

Most assuredly you have—and yet, stop and think a moment: Do you know we have not been "following through" on this word "complaint?" Time and time again it has flung itself back into our faces because we have attempted to compel it to die an unnatural death. "Complaints" are eternal things. You cannot kill them. Any attempt to do so is suicidal. Stamping complaint orders "completed" does not put a parental touch into the transaction. The Public Utility Company from meter reader to manager who fails to see and understand this fact is not worthy of the confidence placed in him by his superiors. "Complaints" poorly executed have always been the nemesis which has followed Public Utility operators and brought discredit upon them and their organization. Many men who are holding enviable positions as unusual operators are perplexed today because they find themselves slipping. Where is their trouble? Just one and only one place. That unassuming word "complaint" no longer is content to die tabled in the shop. It has stepped out deliberately on the stage and insists on recognition—and quite naturally so.

The corner grocer, hardware and drug store proprietors handle "complaints" en-

tirely differently than was their practice ten years ago. The automobile service station, likewise, has forced a new meaning into the word. In fact, no wise operator of any line of business to-day ignores the consequences involved in relegating this word to a secondary place. Consequently, sort of unbeknown to Public Utility operators the old atmosphere surrounding the word "complaint" has become offensive. Better living conditions have been provided for it in far less essential lines of industry, and quite naturally enough, the general public, as onlookers, have come to its rescue. They have forced its more serious recognition upon us.

Let us frankly admit our lack of foresight. Why not openly confess to ourselves that we have been altogether too "close-up" to our problems to actually sense our shortsightedness. We have taken years of past operating precedence as factors just as unchangeable as the law of Medes and the Persians. There has been and always will be a "complaint counter" or "service desk." The very nature of our business makes it mandatory for us to frequently meet our customers. They need our assistance. Then why not make "complaints" a part of our "quick assets?" It can be done.

And this is how it is done:

Follow every complaint through. It entered your office at the so-called Complaint Desk either in person, by telephone call or letter. Why not be just as courteous by simply closing the transaction by the same personal touch? When the shop man or Service Department has properly taken care of the complaint, and the work order has been returned to the office, your responsibility toward your consumer has just begun. Have these executed complaint orders turned over to one of your most competent clerks. That person will then proceed to 'phone every individual represented on the previous day's complaint orders to discover if the standard grade of service was rendered as reported, and if the appliance is working perfectly. This is the personal touch. This is the point of contact which is priceless. The plan itself is so simple in its operation that the results forthcoming are considered trivial and secondary. But stop and think a minute: Is there anything involving a better relationship with our customers which can possibly be considered trivial or secondary?

It goes without saying that the clerk assigned to this position must be high grade and well schooled in the art of handling the public. The voice also must be pleasing over the 'phone and possessing such mannerisms as beget a friendly feeling. In this simple and inexpensive operation you have done two distinct things for your company.

First, you have by word of mouth—never by letter—completed a perfect check on the service department. Secondly, you have secured the actual endorsement by word of mouth from your customer that *he is satisfied*. The customer will seldom, if ever, perjure his testimonial.

As simple as this operation may seem, it has in it the essentials for making lasting constructive public utility good-will. It has been well said that a Nation that has no wars writes no history. It can, in turn be just as truthfully and forcibly said that a Public Utility Company which properly takes care of its complaints will not find it necessary to lean very hard or long on its Publicity Department or Public Relations Committees. "Follow through!!"

Know Your Association

OCCASIONALLY we receive a letter from one of our alert members deprecating the fact that newspapers and other periodicals continue to misrepresent and malign the gas industry. The letter may enclose a particular news item that the writer has clipped from his local newspaper. It may be a syndicated article on "How to Keep Well" in which the author says that all gas appliances are dangerous to health; or it may be an interview with an over-enthusiastic central station operator who claims that the gas industry is being swallowed alive by the electrical industry; or it may be a thousand and one other forms of printed misrepresentation.

Such articles do damage to the gas industry and no one knows it better than the fellow who gets his salary check from our business. As it frequently happens, he writes to Association Headquarters, enclosing the clipping in question, and with all the earnestness he can command and with a generous measure of justified resentment, asks the question: "What are we doing to stop this sort of thing?"

That is the kind of question your Association likes to answer. And there are two "reasons why"; first, because it is a pleasure to work with one of our members who cares enough about his business to fight for its good name; and, second, because one of our most important jobs here at Headquarters is to nail lies with the truth, destroy harmful rumors with the facts and follow up with accurate information all printed attacks that come to our attention.

It may surprise our membership to know that several letters enclosing examples of harmful publicity arrive in this office every week from members in various parts of the country and that in every case of misrepresentation the Association writes a letter or series of letters over the name of its secretary-manager to the person responsible for the statements and calls his attention to the errors that have been made. If human nature were different, we would never get any results with our letters. But the majority of people wish to be fair—particularly newspaper men and special writers for newspapers—and we have never seen a case yet where there wasn't an apology or at least an assurance that future articles on the subject would be written according to the information we supply. However, the letters we write are often followed by letters from our members, the effect upon the recipient therefore being doubly resultful.

Here is a recent, typical illustration embodying all that has been said above:

On May 2nd, E. D. Clary, secretary-superintendent, Burlington Gas Light Company, Burlington, Iowa, sent us a syndicated article by Dr. W. F. Thomson, which appeared in the Burlington Hawk-Eye of the same date. In the article appeared this sentence: "Bathrooms, gas heated, are decidedly dangerous." Mr. Clary asked us to "set this gentleman, Dr. Thomson, right on his ideas of bathroom heating."

On May 9th we wrote to Dr. Thomson and gave him some much needed information, making our letter so friendly that he could not take offense at it. The reply

came on May 14th—and since it is typical we reproduce it here:—

"I have no desire to write anything that would do injustice to an industry such as you represent, and no doubt the line should have been more specific regarding the use or non-use of flue connections. There are, however, so many bathroom gas appliances still in use, which do not have flue connections, that a note of warning in regard to these does not seem amiss.

"It is a source of great satisfaction to note that your organization is taking the lead in abolishing the older type of bathroom gas heating, and I shall take occasion to make note of this fact from time to time in the syndicated feature.

"Thanking you for your letter and assuring you of our cooperation in this matter."

We mailed a copy of this letter to Mr. Clary, acknowledged the letter to Dr. Thomson, and the case was closed.

The more you know about your Association and its activities the more valuable you become to the gas industry.

* * *

Assuring a Lawsuit

The following editorial under the above heading appeared in the Brooklyn Daily Eagle, June 4, 1923.

"In approving the bill decreeing one dollar gas for this city, Governor Smith filed no memorandum of his reasons. At the hearing given on this measure he had indicated a doubt that a flat maximum rate was fair to all the companies operating within the city limits. Either his doubt was removed or he did not consider it of sufficient importance to justify a veto. * * * the Legislature passed this law without investigation of the conditions governing the making and distribution of gas. It did not know and it did not seek to learn what effect its action would have upon corporations which claim that a reduction in the present prices of gas would destroy them as paying enterprises. The practice of leaving such questions to be dealt with by a Public Service Commission as an investigating and rate-making agency of the Legislature was ignored. It would seem as if a proceeding so unusual as this should have drawn from the Governor an explanation of his attitude regarding it. The new law does not assure dollar gas to consumers. All it does is to assure a lawsuit. If the Legislature can fix the prices for all public utilities without first ascertaining whether those prices are just with respect to invested capital, it can proceed to confiscation whenever it pleases. The dollar gas issue demands investigation. It received no investigation at Albany worthy of the name, either from the Legislature or the Governor."

Bigger and Better

THAT MEANS the 1923 Convention of the American Gas Association at Atlantic City, October 15th to 19th.

Last year, after the Convention had passed and we were able to sit down and calmly gather together our impressions of it and the expressed opinions of others, with the figures of attendance, etc., at hand, we found that a good many records had been broken. Never before had there been such an enthusiastic gathering of gas men and manufacturers. Think of it, over 2,700 registered members and guests. Never before had the general and sectional meetings been so well attended and productive of such live, interested discussions. Never before had our members and visitors seen such a comprehensive and large exhibition—136 exhibitors covering 19,000 sq. ft. of exhibition space. These were some of the records which were established and we were proud of them.

But the 1923 Convention promises to far surpass this record meeting. Indications point to an attendance of members and guests never before reached. And they will be amply repaid. The business program, a tentative draft of which will be published in the near future, will contain papers of such importance that no gas man can afford to miss them, and addresses that will deal with some of the vital problems now before the gas industry. And the exhibition, this year covering 27,500 sq. ft. of space on the Steel Pier, an increase of 50% over last year, and occupied by some 200 exhibitors, will be the most comprehensive display of the last word in gas appliances, accessories, apparatus, supplies and labor saving devices ever gathered together in one place.

However, all work and no play is poor medicine even at a Convention. With this in mind the Entertainment Committee is preparing a program of entertainment that will not only cure this condition but which will be distinctly unique in several of its features. And this brings us to another thought.

There is no other place quite so delightful for a few days' stay in the fall as Atlantic City. Blessed with balmy breezes direct off the ocean, with unsurpassed hotels and with its incomparable Boardwalk, it leaves nothing to be desired either as a place to spend a few fall days or as the scene for the Convention.

Watch for the publishing of the program and make up your mind not to miss the 1923 Convention of the Association—the greatest convention and exhibition that the gas industry has ever held.

The Prone Pressure and the Oxygen + CO_2 Method of Resuscitation

Association headquarters have received several notices of the successful use of the new method of resuscitation developed by the Commission on Resuscitation from Gas Asphyxiation. They would be glad to receive other personal experiences from companies now using this new method.

ACCOUNTING SECTION

J. W. HEINS, Chairman — W. A. SAUER, Vice-Chairman

H. W. HARTMAN, Secretary

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BARKER, W. S., Newark, N. J.
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BRINE, F. A., Atlanta, Ga.
CASSELL, W. H., Baltimore, Md.
CLINTON, DEWITT, Worcester, Mass. (N. E. Gas Eng.)
DAVIDSON, H. C., New York, N. Y.
DEAL, E. C., Springfield, Mo. (Missouri)
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HODGES, E. W., San Francisco, Cal. (Pacific Coast)
HOFFMAN, F. C., St. Paul, Minn.
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PETTES, W. H., Newark, N. J. (New Jersey)
PHILLIPS, R. E., Lincoln, Neb. (Iowa)
PORTER, EDWARD, Philadelphia, Pa. (Pennsylvania)
POTTER, O. F., Newark, N. J.
RASTENBURG, F. G., Indianapolis, Ind.
REESE, J. G., Baltimore, Md.
SCHMIDT, JR., WM., Baltimore, Md.
SCOBELL, E. C., Rochester, N. Y. (Empire State G. & E.)
SCOTT, J. M., Wilmington, Del.
SHEARON, B. P., Hammond, Ind. (Indiana)
SHORT, A. F., Providence, R. I.
TOSSELL, A. L., Chicago, Ill.
WILBUR, A. A., Brockton, Mass. (Gas Sales of N. E.)
WITTERS, A. C., Chicago, Ill.

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Budget—F. H. PATTERSON, Rochester, N. Y.
Customers Accounting—W. A. DOERING, Boston, Mass.
Fixed Capital Records—H. J. LAWALL, Philadelphia, Pa.
Insurance—J. G. REESE, Baltimore, Md.
Nominating—EWALD HAASE, Milwaukee, Wis.
Relations with Customers—A. L. TOSSELL, Chicago, Ill.
State Representatives and Contributions to Monthly—JAMES LAWRENCE, New York, N. Y.
Uniform Classification of Accounts—W. J. MEYERS, New York, N. Y.

Promoting Good Will Through the Order-taking Department

LOUIS STOECKER, Traveling Auditor, Public Service Gas Company, Newark, N. J.

Third Article of a Series dealing with the Relations of Company and Customer.

PROBABLY no part of the activities of the utility company reaches as many customers and has a greater influence on customer relations than that of the Order or Contract Department. Here, the initial contact with every customer is made. In many instances this is the only direct contact the customer may ever have with the company. It is the introduction of the company to the customer and the latter's future attitude depends upon the impression made at that time.

Unquestionably, the customer approaching the Order or Contract Department has already formed some conception of the company, either through hearsay or previous experiences with utility companies. The treatment accorded him, therefore, either confirms or disproves this preconceived opinion. Whether it is swayed favorably or placed in the balance depends entirely upon his reception. For this reason, the approach of the customer and the taking of his

order are of prime importance in customer relations.

Much depends upon the personnel of the Order or Contract Department. In fact, with no actual physical service rendered by the department upon which judgment may be based, the personnel becomes the leading factor in giving the customer a favorable first impression. On this account, it is doubly important that the employe is not only well versed in the company's policies and has a thorough understanding of service work, but that he is also experienced in dealing with the customer in a courteous and attentive manner and has the ability to interpret the company's spirit of service. Thanking the customer for his signature to applications and in a few words assuring him that his order will receive attention are only two of many ways in which the employe can express himself for the benefit of the company. Many times it is such small details which may appear trivial that is a determining factor in building good-will.

The employe selected for this department should be representative of the company both in manner and appearance. And to meet the other requirements of training and knowledge of the business, he must necessarily be a choice from within the organization. Without this background, an employe in the Order or Contract Department dealing direct with the customer, only invites misunderstandings and though he may develop into an efficient employe, his training, in the majority of cases, is at the expense of customer good-will. Many sources present themselves within the organization from which selections may be made. The employe at a desk in this department handling the routine work coming from the counter is a logical candidate to deal direct with the customer. Ideal employes for order and contract work can be drawn from the ranks of collectors, meter readers, and from other commercial street men. And the Distribution Department is a most fertile field for some of the best candidates. Experienced in the practical side of service, the operating man is able to converse more intelligently with the customer and to give the best kind of satisfaction. There is no question that a knowledge of the practical part of service is an invaluable asset to an employe handling order and contract work. On this account, every employe handling this detail with the customer, no mattter from what part of the organization he has been drafted, should be given every opportunity to become acquainted with the operation and routine of the Distribution Department. Much in this way can be accomplished by the employe periodically visiting the Distribution Department to observe its routine and by occasionally accompanying the operating man to customers' premises to witness the physical performance of an order.

As stated in a preceding article of this series, the approach of the customer to make known his wants and to arrange for them should be made as easy and with as little loss of time to himself as possible. The simplest method so far as the customer is concerned, and for the company for that matter, is the use of the telephone. Yet from the company's standpoint, the locality and type of customers must be given serious consideration in deciding upon the general use of the telephone, especially for initial service. A transient or cosmopolitan population probably would not permit of this method for new customers except at a risk to the company. Of course, the use of the telephone for the convenience of the cus-

tomer should be encouraged as much as possible. For transfer of service, inquiries, and complaints, the telephone can be used to good advantage for both the customer and company.

Where the trend of order and contract work is toward the general use of the telephone, it has been found expedient to install an auxiliary telephone board in that department. An installation of this kind in addition to handling the general order work and order inquiries, takes care of all calls from the customer seeking information of any nature. The efficient use of such an auxiliary board demands quick access by the operator to the source of information. By having as much data as possible right at hand and with the auxiliary board having direct connection with all departments, the information requested by a customer can be quickly obtained and transmitted to him. By thus centralizing all calls for information, the common practice which is most aggravating to a customer, of transferring him from one telephone to another, with the incidental delay, is entirely overcome.

The operator of the auxiliary board must necessarily be a high type of employe. Tactfulness, intelligence, and a pleasing voice are the main essentials. Equally important is the knowledge of the source for obtaining information to answer queries for which data is not immediately at hand. This calls for a general knowledge of the business and the details of its organization. Constant supervision of the board and the immediate notification of the operator of any changes in routine or departures from regular practice in conducting business, no matter how slight, are required to insure successful operation of the auxiliary telephone board.

Regardless of the extent to which the telephone is used for order and contract work, provision must be made in the office to take care of the customer calling in person. For this purpose a counter should be provided in an accessible location, preferably on the ground floor of the office. Here, its location should be such that it is readily seen upon entering the office, and the department name prominently displayed over the counter will further aid in guiding the customer. The work at the counter should be conducted with as little confusion or outward signs of haste as possible. Plenty of space both behind and in front of the counter will help to overcome any impression of crowding or confusion. Orderly and systematic arrangement of desks and files behind the counter will also do much to offset any such impression, besides facilitating the clerk in his work.

To save open discussion at the counter in the presence of other customers, it is well to consider equipping the order counter with desks and chairs, either directly behind or in a space adjoining it. To these desks, customers with a special case or an aggravated grievance can be referred and attended to by the department head or someone assigned especially to such cases.

Courtesy to the customer and promptness in attending to him are the key-notes of successful order counter work. The first, to some extent, is entirely dependent upon the employe and his supervision, while the latter is mainly a question of policy and system followed. Sufficient help at the counter at all times to avoid crowding and the resultant confusion to both the customer and employe is probably one of the most difficult problems. The demand on this department and the

fluctuations of its work vary considerably according to the period of the month, and again, according to the season of the year. This calls for elasticity in the organization. Much may be accomplished in periods of heavy demands by relieving the counter man from all work not connected with dealing directly with the customer. Unless in peak periods other well-trained employes can be called upon to help by efficiently attending to the customer direct. Consideration should be given to having whatever additional help is available, to assist the counter man in any manner he may direct to obtain necessary information to answer a customer. This permits the counter man to remain continuously at the counter and enables him to attend to a larger number of customers more quickly and more efficiently. It also removes the possibility of dissatisfaction to the customer by being compelled to transact his business with an employe not fully trained and probably confused by the rush of work and uncertain of himself on account of his inexperience.

Under all circumstances, the counter man should have everything at hand to transact business with the customer with dispatch. Order files should be within easy reach and so arranged that a customer's order may be located without much search. Daily shop reports of all unfinished orders and reasons for nonperformance will enable the counter man to give the customer first-hand information and probably save much time and many telephone calls to the shop. Contracts, deposit receipts, and all other forms should be within easy reach. All planning of the order or contract department, both the work and the physical arrangement, should be made with one purpose in mind; to keep the counter man at the counter and with the customer.

One of the main features of the counter man's work with a direct bearing on the service to be rendered and of value to the company, is to obtain complete and accurate information. Tactfulness by the counter man must be exercised in extraordinary cases in the number and character of questions asked. For ordinary orders, the questions should be reduced to a minimum and put in concise form. This pertains particularly to the service contract. Also the form of the contract should be simply worded and of a convenient size rather than a formidable appearing legal document. The average customer is wary of anything of a legal nature. It is for this reason that the customer's signature should be requested only where absolutely necessary.

Some responsible member of the order department, preferably the department head, should have the authority where circumstances appear to warrant, to make a definite promise for the performance of an order. Such a promise should give the order precedence over all others, and every employe having any contact with the order should bend his best efforts toward fulfilling the promise. It should be considered a personal obligation by each employe concerned. Such performance in emergencies means much to the customer and the company may rest assured the news will be heralded.

Accounting Section Exhibition Committee Report

P. D. WARREN, Chairman, The Peoples Gas Light & Coke Co., Chicago, Ill.

THE EXHIBITION COMMITTEE of the Accounting Section have made plans for an exhibit on the Steel Pier this year that will be a center of interest for all visitors and that will furnish a fund of useful information for gas men and gas women to carry home with them.

Through the courtesy and cooperation of Association Headquarters we have secured a very prominent space, the size of which will permit all exhibits to be shown to the best advantage.

An actual working exhibit of a "Merchandise Accounting" system that is believed to be one of the most efficient in use in the country will be shown.

Another working exhibit will reveal a method of stamping amounts on gas bills that has been worked out by one of the progressive companies; this will be of great interest to our guests from the standpoint of economy and neatness.

These two exhibits alone will amply repay anyone for the time spent in visiting the booths but this is only the beginning of what we have to offer.

A third working exhibit consists of a new style gas billing system; the machine used is almost human and performs in one operation the work that formerly required three or four operations.

"Bookkeeping Without Books" will be shown in a manner that makes it possible for every one to learn the details of this interesting subject in a limited time. One of the leading companies has consented to put on this exhibit and furnish a high class man who has grown up with the system and is competent to explain the different routines. Here is a chance to get posted on a subject that every man and woman in the business is talking about.

A sub-committee of the "Relations with Customers" Committee is furnishing the forms used by their respective companies in dealing with their customers and these will be displayed in such a manner that our visitors can make ready reference to all of them or to any individual company's forms. This will be the most comprehensive display of forms that has ever been attempted at any gas convention.

In addition to the exhibits we will have a lounging space where all papers issued can be found and where everyone is invited to meet his friends and discuss the exhibits in comfort.

The booths will be open every day from 9 a. m. to 6 p. m., including the Monday preceding the opening date of the convention, and visitors will find at all times attendants that are competent to explain the different exhibits.

No visitor to the convention should miss this exhibit. It is one of the big features of this meeting.

Associations Affiliated with A. G. A.

Canadian Gas Association
Date of Affiliation—Mar. 25, 1919
Pres.—Col. D. R. Street, Ottawa Gas Co., Ottawa, Ont., Can.
Acting Sec.-Tr.—E. A. Hills, 17 Toronto St., Toronto.
Conv., Chateau Laurier, Ottawa, Aug. 23, 24, 1923.

Empire State Gas and Electric Association
Date of Affiliation—Nov. 21, 1919
Pres.—M. J. Brayton, Utica Gas & Electric Co., Utica, N. Y.
Sec.—C. H. B. Chapin, Grand Central Terminal, New York, N. Y.
Conv., 1923.

Illinois Gas Association
Date of Affiliation—Mar. 19, 1919
Pres.—Robert B. MacDonald, Peoples Power Co., Moline, Ill.
Sec.-Tr.—R. V. Prather, 305 Illinois Mine Workers Bldg., Springfield, Ill.
Conv., 1924.

Indiana Gas Association
Date of Affiliation—April 24, 1919
Pres.—F. B. Tracy, Central Indiana Gas Co., Muncie, Ind.
Sec.-Tr.—E. J. Burke, Citizens Gas Co., Indianapolis, Ind.
Conv., 1924.

Iowa District Gas Association
Date of Affiliation—May 21, 1919
Pres.—H. B. Maynard, Citizens Gas & Electric Co., Waterloo, Ia.
Sec.-Tr.—H. R. Sterrett, 551 Seventh St., Des Moines, Ia.
Conv., 1924.

Michigan Gas Association
Date of Affiliation—Sept. 18, 1919
Pres.—Fred W. Seymour, Battle Creek Gas Co., Battle Creek, Mich.
Sec.-Tr.—A. G. Schroeder, Grand Rapids Gas Light Co., Grand Rapids, Mich.
Conv., Grand Rapids, Mich., Sept. 19-20.

Missouri Association of Public Utilities
Date of Affiliation—June 18, 1920
Pres.—H. C. Blackwell, 1330 Grand Ave., Kansas City, Mo.
Sec.-Tr.—F. D. Beardslee, 315 N. 12th St., St. Louis, Mo.
Wiley F. Corl, Chmn. Affiliation Com., Missouri Utilities Co., Mexico, Mo.
Conv., 1924.

New England Association of Gas Engineers
Date of Affiliation—Feb. 19, 1919
Pres.—C. E. Paige, C. H. Tenney & Co., Boston, Mass.
Sec.-Tr.—J. L. Tudbury, 247 Essex St., Salem, Mass.
Conv., Boston, 1924.

Gas Sales Association of New England
Date of Affiliation—Oct. 1, 1919
Gov.—F. A. Woodhead, 689 Massachusetts Ave., Arlington, Mass.
Sec.—M. Bernard Webber, 150 Congress St., Boston, Mass.
Annual Meeting, 1924.

New Jersey Gas Association
Date of Affiliation—April 25, 1919
Pres.—James P. Hanlan, Public Service Gas Co., Newark, N. J.
Sec.-Tr.—R. A. Koehler, Public Service Gas Co., Newark, N. J.
Conv., 1924.

Pacific Coast Gas Association
Date of Affiliation—Sept. 18, 1919
Pres.—F. S. Wade, Southern Counties Gas Co., Los Angeles, Cal.
Sec.-Tr.—W. M. Henderson, 812 Howard St., San Francisco, Cal.
Conv., Del Monte, Cal., Sept. 11-14.

Pennsylvania Gas Association
Date of Affiliation—April 10, 1919
Pres.—Grier Hersh, York Gas Co., York, Pa.
Sec.-Tr.—Geo. L. Cullen, Harrisburg Gas Co., Harrisburg, Pa.
Conv., 1924.

South Central Gas Association
Date of Affiliation—Oct. 15, 1919
Pres.—F. C. Armbruster, Southwestern Gas & Electric Co., Shreveport, La.
Sec.-Tr.—S. J. Ballinger, San Antonio Public Service Co., San Antonio, Texas.
Conv., 1924.

Southern Gas Association
Date of Affiliation—May 20, 1919
Pres.—E. L. Richa, 1602 Lexington Bldg., Baltimore, Md.
Sec.-Tr.—E. D. Brewer, 75 North Mayson Ave., Atlanta, Ga.
Conv., 1924.

Wisconsin Utilities Association
Pres.—Harold L. Geisse, Wisconsin Valley Electric Co., Wausau, Wis.
Exec.-Sec.—J. N. Cadby, 445 Washington Bldg., Madison, Wis.
Conv., 1924.

Geographic Divisions

Eastern States Gas Conference
Date of Formation—April 11, 1923
Pres.—P. H. Gadsden, The United Gas Improvement Co., Philadelphia, Pa.
Sec.-Tr.—L. R. Dutton, Philadelphia Suburban Gas & Electric Co., Jenkintown, Pa.
Conv., 1924.

ADVERTISING SECTION

B. J. MULLANEY, Chairman — J. M. BENNETT, Vice-Chairman

CHARLES W. PERSON, Secretary

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CAMPBELL, E. C., Benton Harbor, Mich. (Michigan)
CLIFFORD, F. S., Fitchburg, Mass. (Gas Sales of N. E.)
COONEY, E. J., Lowell, Mass.
CRONE, F. W., New York, N. Y. (Empire State G. & E.)
DEFRESE, S. E., Rome, Ga. (Southern)
ENGLISH, A. L., Council Bluffs, Iowa (Iowa)
FRANKLIN, S. J., Millville N. J. (New Jersey)
GOULD, WM., Boston, Mass. (N. E. Gas Eng.)
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MULHOLLAND, S. E., Fort Wayne, Ind. (Indiana)
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ROLSTON, R. J., Philadelphia, Pa. (Pennsylvania)
SOULES, E. E., Peoria, Ill. (Illinois)

Public Utilities in Connection With Community Advertising*

BERNARD J. MULLANEY, Peoples Gas Light and Coke Company, Chicago, Ill.

THIS subject was handed to me by the makers of your program. My own preference would have been for different phrasing, namely:

"PUBLIC UTILITIES *ARE* COMMUNITY ADVERTISING."

They are exactly that. Let the assertion soak a moment and you will vote "aye" — unanimously. Meanwhile, unleash imagination to fill in the details of a supposititious case.

You arrive in a strange city—not quite a metropolis nor yet a "small time" town; just a city. The annual charity ball is absorbing the taxicabs, so you seek a street car.

You wait—and wait—and finally a sorry looking car comes rattling and bumping along on uneven rails and you climb aboard to be jottled and jarred as it rattles and bumps onward.

As you leave the car, the electric lights go out.

You stumble into the hotel and register by improvised candle light. Anyhow, you can get some food? Yes; a cold snack perhaps but nothing hot; the gas service is somehow crippled.

You grope to a telephone in anticipation of quickly hearing a local friend's cheery urge to "come right out to the house"; but after futile struggle with busy signals and "wrong number," you surrender, with murder in your heart and the ineradicable conviction that you have struck "a bum town": shabby, shiftless, unprogressive and all the other correlations of "a bum town."

Is the picture overdrawn? It is overdrawn only as it represents unhappy experiences with four different kinds of public utility service happening all at

*An address delivered before the Community Advertising Association, a department of the Associated Advertising Clubs of the World at their Convention in Atlantic City, June 6, 1923.

once. Spread the experiences over a longer period and the cumulative effect is the same. Inadequacy in any one of the four services contributes its share to building an unfavorable impression of the community in which the inadequacy is encountered.

The point is: without adequate public utility services, your community is not a successful advertisable commodity, in the same sense that food without flavor is not a successfully advertisable commodity.

Perhaps you never have seen the matter in quite that light. You will see it so, if you analyze it and get a correct perspective on the relationship between these public utility services and a given community.

Essentials of Modern Community Life

These services—I mean street railway, electric light and power, gas and telephone service, when I speak of "public utilities" or "public utility service"—are essentials of modern community life. They have been aptly termed "allies of industry." They are more than that; they are *agencies* around which modern civilization is built. Commerce and industry and the entire social fabric of community life, as we know it today, are built around them and cannot function without them: transportation for the workers in commerce and industry; light and power for industrial efficiency; gas for dependable domestic fuel and a thousand industrial heat processes; telephones for quick commercial, industrial and social communication.

A watch with a poor hair spring, or an automobile with faulty transmission is a "lemon." So public utility service, as it is good or bad, advertises a community's character and does it more eloquently than bill boards or newspaper pages or magazine "spreads" or direct-by-mail; its silent testimony out clamors the noisiest "mineral orange" or "de luxe red" that Cusack or Gude or Maxwell ever put on a painted bulletin.

This is so obvious that you can reduce it to a formula: as a community's public utility service is good or bad, so in like degree is that community a comfortable and convenient and satisfactory (or the contrary) place in which to live and do business.

Everyday experience furnishes confirmatory analogies. Sloppy store-keeping, bad elevator service, careless salespeople, unreliable delivery, and incorrect billing will nullify the best advertising copy a big retail store can produce. How long would crowded Atlantic City stay crowded, with run down hotels and a rotted and rickety board walk?

Conversely, consider the advertising value to an industry-seeking community, when one who speaks with authority can say of it something akin to the comment on Chicago by Steinmetz, the wizard of electricity, in a recent magazine article: "The greatest pool of power in the world is now in Chicago where stations (electricity generating stations) having a capacity of 800,000 horse power are linked together" and consequently "unlimited power is available anywhere at any time."

Some Obvious Advertising Consequences

Public utility service that is below par may even be a red light "stop" signal to the merchant and manufacturer or investor who is considering a location, a plant site or an investment in your community; it may suggest some influence, some ferment as it were, at work there that makes your community an undesirable and perhaps an unsafe place for business and investment.

This is not academic theory. It has happened. Examples in abundance could be cited if time permitted. I have personal knowledge of a conspicious one—a ten-year utility franchise dispute that not only stopped the natural flow of capital and enterprise into the city concerned—capital for investment in merchandising and manufacturing, as well as in real estate—but reversed the current and set it running away from that city.

Service and Community Responsibility

I would not imply that the community is always and altogether at fault where inadequate public service exists, with consequently bad advertising reaction upon the community. Utility management is not always blameless. But, generally speaking, and always remembering the inevitable exceptions, public utility companies furnish just about as good service as their respective communities let them furnish. Up-to-date utility managers know that success lies, not in a skimped-service-and-high-rates policy, as sometimes imputed to them, but in good service at lowest practicable rates and *volume*. This cannot be achieved when utility operation is hobbled by local misunderstandings and their consequences.

But what has all this to do with strictly advertising? Everything, when your community advertising problem is studied in its entirety. The best advertising copy or campaign will not make good if the selling plan is out of joint or the goods to be advertised are not "right." A good advertising man looks into those factors first and if they need correction, starts corrective measures.

Since public utility service contributes so much to an outsider's impression of a community as a desirable place in which to live, do business or build an industry, shouldn't that service be of concern to the community advertiser? If the service is a community asset, then its very existence is good advertising for the community, as well as material for copy; if it is a liability, the community advertiser should want to see it converted into an asset.

Horse Trade Methods Out of Place

Let's be specific. If one of the public utility services in your town is in the community-liability class, the chances are that the utility company is not entirely to blame; almost invariably complete inquiry will show that some part of the community is somewhat to blame. Intelligent community co-operation, without which community boosting is futile, can always get at the root of the trouble and almost invariably it can start the corrective measures necessary to convert the liability into an asset. The ten-year franchise dispute which has been alluded to, was settled that way and with that result.

To be still more specific. In transactions between public utility companies, on the one hand, and governmental regulatory bodies (state or local) on the other, situations may occur which can be resolved only by unofficial and unselfish representatives of community interest.

The question at issue may be, and too often is, approached from both sides on the basis of a horse trade. To serve a political, a factional, or a personal purpose, state or city officials advance unreasonable demands. As a natural counter precaution, the company asks for more than it expects or needs. Discussion easily becomes a wrangle. One word borrows another, as when individuals dispute. Tempers rise. Human nature at its worst enters—stubbornness, pride of opinion, personal dislikes. The result

is an impasse which can be broken only by an agency that speaks only in the public interest—the chamber of commerce or other civic body, representing the composite brains and good sense of the community.

It thus becomes the opportunity, not to say duty, of this civic body to bring together all concerned in the controversy, make them put all the cards on the table face up, and so compel a settlement on the facts, the justice, and the common sense of the situation.

Community Welfare is Paramount

In this there is no suggestion of becoming a partisan of the utility company. On the contrary, the suggestion is to be really non-partisan and concerned only for community welfare. If the utility company is entirely, or even partially in the wrong, genuine representatives of community interest can easily develop that fact and community public opinion will quickly compel a reversal of the company's policy. On the other hand, if self advertising, official demagoguery, political buccaneering, or legalized piracy in the sacred name of "Reform" are elements in the situation—and not infrequently they are—it is in the public interest to disclose the facts and again let community opinion exert itself.

This is especially a job for the chamber of commerce or other civic body because there are fundamental differences between public utility business and other kinds of business, which tend to breed obscurities and misunderstanding in the public mind, and which the utility company is not always able, unaided, to clear up.

The utility company, for example, has to have about five dollars of capital investment for every dollar of gross annual income. That is the average the country over. In other words, it turns its capital only once in five years. The manufacturing or merchandising business turns its capital from two or three to eight or ten times a year.

Some Sources of Misunderstandings

The public utility company does not gather "profits" in the sense that the manufacturer or merchant does. It is permitted to earn only a "reasonable return" on the value of its property; and utility regulation, as applied now in nearly all states, usually holds this return to 6 or 8 per cent. The merchant and manufacturer expects to earn that much as "interest" on his capital and a reasonable profit in addition.

The heavy capitalization required in the utility business excites suspicion of "water" and of rates to produce dividends on "watered stock." On this subject the demagogue rises to a fine frenzy. As a matter of fact all the "water" of the Atlantic would not affect rates under modern utility regulation. Capitalization is utterly ignored in rate making. The rates, and the return to the investor yielded by the rates, are based *on the value of the property* regardless of the capitalization—on that and nothing else.

The public utility company cannot put away a profit-hoard in fat years to take care of lean years, or adjust its operations and selling prices to changing business conditions for the making of profits. All of its operations, including its accounting, are supervised by regulatory authority and made a matter of public record and it is permitted to earn only enough to cover expenses and a reasonable return on the value of its property.

An important fact not always recognized is that *continuously good public*

utility service is maintained ***only by providing it before it is needed.*** The company furnishing any kind of public utility service has to keep on building ***ahead*** of current demand and even ahead of ***visible future*** demand.

Why Utilities Need "Elbow Room"

When the big new industry decides to locate in your town, usually out near the city limits, its demand for public utility service is immediate—for use at once and during the construction period, not when the plant is ready to operate. The enterprise requires *immediately* electric light and power and gas service for construction and fabrication processes, telephone service for communication, transportation for workers. These services on a large scale cannot be provided overnight. It usually takes months for the utility to get plants built and machinery delivered, for much equipment is built to order. The reaction is upon the community if the public utility companies haven't had enough "elbow room" in times gone by to be ready for the new demand.

Ponder the significance of this. It will take you far into the reasons why hobbling and starving your public utilities will inevitably hobble and starve your community, retard its growth and nullify your best community advertising efforts.

Service Demands Outrun Population Growth

Then consider how the demand for, and growth of, public utility services of all kinds has outrun growth in population. That will complete your realization (if it be still incomplete) of the value of these services to commerce and industry and society in general, and consequently to your community, and of their paramount importance as factors in community advertising.

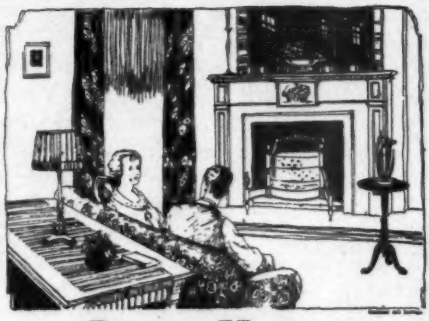
Speaking in round figures, the population of the United States has increased about forty per cent in twenty years. During the same period demand for and use for street railway services has increased 166 per cent; use of gas service has increased 207 per cent; use of telephone service has increased 1,000 per cent; use of electric light and power service has increased 2,000 per cent. The electric light and power company in Chicago has more customers (630,000) than there were users of electricity in the entire country twenty years ago.

Only One Possible Conclusion

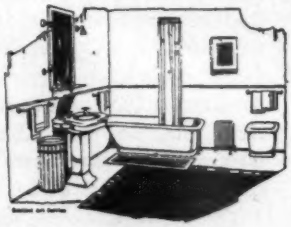
What is the obvious conclusion? Only one is possible. The organized community life of today, commercially, industrially and socially, is built around these public utility services. As they function efficiently or inefficiently, so the community functions efficiently or inefficiently and becomes attractive or unattractive to new enterprises and new population.

These services function best when there is mutual understanding and good will between them and the communities they serve. Questions that might tend to disturb those relations, of which rates and service regulations or restrictions are the commonest examples, are not questions to be settled on the basis of a horse trade. They are best settled on the basis of community interest in its broadest sense.

The community advertiser can do more than any other to establish this principle in his community and to make application of it effective. When he does so, he is doing the best work he can do within his sphere; for when he does so he sets the corner-stone of his entire community advertising structure by assuring for his community the efficient public utility services that will make his community an advertisable commodity.



Better Homes
need
Better Gas Appliances

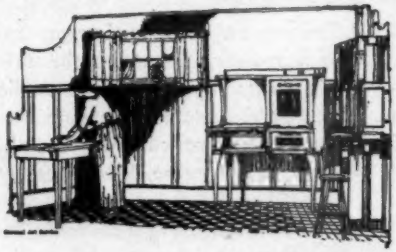


WHETHER it's the unseen part of the bathroom—the Gas Water Heater—or the much used Gas Range, or the cheery fireplace heater, you will find the Best of Gas Appliances in our Salesroom at Wisconsin and Jackson Streets.

EVERY appliance shown by us is constructed in strict compliance with the Standard Specifications of the American Gas Association. This assures the highest quality.

Our Monthly Payment Plan enables everyone to enjoy the comforts of Complete Modern Gas Service.

Milwaukee Gas Light Company



If it's done with Heat—You can do it Better with Gas

Quality Advertising of Quality Appliances

A portion of the gas industry's exhibit at the International Advertising Exhibition held at Atlantic City at the recent convention of the Associated Advertising Clubs of the World

More than 120 feet of gas, central station, and street railway advertising literature was shown. About 8,000 advertising men viewed the display

MANUFACTURERS SECTION

F. A. LEMKE, Chairman — G. W. PARKER, Vice-Chairman

C. W. BERGHORN, Jr., Secretary

MANAGING COMMITTEE—1923

ABBOTT, M. E., Taunton, Mass. (Gas Sales of N. E.)
BAILEY, JR., E. P., Cleveland, Ohio
BARTLETT, C. E., Philadelphia, Pa. (New Jersey)
BARTLETT, C. E., Philadelphia, Pa. (Pennsylvania)
COLLINS, D. J., Philadelphia, Pa.
CRANE, WM. M., New York, N. Y.
CREVISTON, A. E., Baltimore, Md. (Southern)
DE HART, JR., J. S., Newark, N. J.
DICKEY, E. S., Baltimore, Md.
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ROPER, GEO. D., Rockford, Ill. (Iowa)
SHIDENGLAND, C. H., Dallas, Texas (South Central)
SIMLER, O. P., Lorain, Ohio
SMITH, W. L., Battle Creek, Mich. (Michigan)
STITES, TOWNSEND, Gloucester, N. J.
TAPPAN, W. H., Mansfield, Ohio

CHAIRMEN OF SECTION COMMITTEES ORGANIZED TO DATE

Exhibition—F. A. LEMKE, Kalamazoo, Mich.
Nominating—J. S. DEHART, JR., Newark, N. J.
Division of Accessories Manufacturers—EARL W. ROBERTS, Detroit, Mich.
Division of Apparatus & Works Manufacturers—D. J. COLLINS, Philadelphia, Pa.
Division of Gas Range Manufacturers—W. H. TAPPAN, Mansfield, Ohio.
Division of Heating Appliance Manufacturers—E. P. BAILEY, JR., Cleveland, Ohio.
Division of Industrial Appliance Manufacturers—H. R. MAXON, Muncie, Ind.
Division of Lighting Appliance Manufacturers—TOWNSEND STITES, Gloucester, N. J.
Division of Meter Manufacturers—DONALD MCDONALD, New York, N. Y.
Division of Office Labor Saving Devices—E. A. NORMAN, New York, N. Y.
Division of Water Heater Manufacturers—O. P. SIMLER, Lorain, Ohio.
Division of Supply Manufacturers—J. J. GREENE, New York, N. Y.

The 1923 Convention and Exhibition

The following letter and data has been sent to every manufacturer member and we cannot too strongly urge them to get behind this movement. (EDITOR'S NOTE.)

"I wish I could get our manufacturer company members together in one group for a few minutes and tell them about some of the big plans we are making for our Fifth Annual Convention and Exhibition on the Steel Pier, Atlantic City, October 15 to 19, 1923.

"Without wasting any words, let me say now that our October meeting is going to surpass any gas convention ever held before—surpass it in attendance, number and variety of exhibits, strength of program, entertainment features, etc.

"I need not give more details here about the convention itself—you will find them on the attached sheets. But what I do wish to emphasize in this letter is the importance of advertising the convention thoroughly and persistently for the next four months, concentrating on two general classes of audiences—first, the gas consuming public; second, the gas industry and industries allied with it—in other words the very persons you do business with every day.

"We at Headquarters will concentrate on the first class. Just a word, however, to those companies who advertise nationally in the Saturday Evening Post, Literary Digest and other mediums. One advertisement devoted to the annual convention and its importance to 45,000,000

American people who use gas service, will do more good than a trainload of literature issued from this office. There is ample time to prepare copy and illustrations for such an advertisement. We will give the facts to your advertising agency—indeed, we'll cooperate to the limit in any way you suggest. How many companies will step up to the front and do this for us?

"Now as regards the gas industry and allied industries. In reaching this class of audience, you are talking to your own customers and the idea to impress upon them is that the gas industry is knit together into a big national family, that this family meets in Atlantic City on October 15 to 19 for its annual reunion, and that under one roof is shown the largest and most modern and complete exhibition of gas appliances, equipment and products ever gathered together at one time in one place.

"We want to exploit the idea that this year's convention and exhibition is the 'style' show of a four billion dollar industry, dedicated to service; that the appliances, equipment, etc., exhibited represent more than a hundred years of accumulated research and inventive work by the best engineering talent in the world; and that the ideal of every manufacturer is to furnish safe, efficient, durable equipment that will render the highest service to the public.

"That, very briefly, is the kind of story you manufacturers might tell. And in the telling of it you should exploit yourself, your wares and your place in the industry. If you are proud of the equipment you will exhibit at Atlantic City, start right now to tell the world about it and add to your self-exploitation a good measure of publicity for the gas business, its importance to the country, etc. Let's get enthusiastic about our business, our service, our equipment. Let's tell the nation how necessary the gas industry is to its domestic and industrial life. Let every prospect, every customer, every person on your mailing lists know about you and your business. And make the national convention the pivot around which you build your story.

"Here are some specific ways that might be utilized:

1. National magazine advertising. (I have already touched on this.)
2. House organs, special bulletins, sales letters, etc., to entire mailing lists.

First, exploit your company and your convention exhibit. Tell why you are exhibiting and what a national convention of the gas industry means to you and your customers. Give facts and figures about the industry. State how important a part you play in its destiny. Give a history of your company—let it be known that you manufacture quality goods—that you are helping to improve gas service, etc., etc. Above all, play up the line "Steel Pier, Atlantic City, October 15 to 19, 1923."

3. Trade paper advertising.

Here you will be talking to gas men—the fellows we want to register at Atlantic City. Come out openly and boost the convention. Play up your exhibit and the convention program. Let the gas men know who will be in charge of your booth—publish their photographs or the photographs of your sales force. Talk convention from first to last—your reasons for exhibiting— and what you will exhibit. Coin a slogan and run it in every ad. If this were an automobile show, you would see "This is a

Studebaker Year," plastered everywhere.

4. Special illustrated folders to your mailing lists.

If you want to deviate from your regular forms of direct-by-mail advertising, we know of printers in New York City who will submit, free of charge, layout, prices, etc., of one or more folders. We will arrange details for you if you wish to take advantage of such an offer.

"I know that many of our manufacturer companies are going to devote special attention to advertising themselves and their convention exhibits this year. But the fellows who start early and hammer away at it are going to get the jump on the others and profit in a definite dollar and cents way during the week of October 15 to 19.

"Start now and use every method at your disposal to make the 5th Annual Convention the biggest business success in your lifetime and one that will make history for the gas industry. Use the facts on the attached sheets. Ask for additional material if you need it. We at Headquarters are with you one hundred per cent strong.

"I know you are interested. But a reply from you stating that you will cooperate will help us a lot.

Very truly yours,
OSCAR H. FOGG,
Secretary-Manager."

FACTS ABOUT THE MANUFACTURED GAS INDUSTRY

The gas industry is now adding new customers to its gas mains at the rate of 350,000 a year. This is as many persons as live in Kansas City, or Seattle or Minneapolis.

Approximately 48,000,000 persons in the United States now use gas for lighting, heating and cooking.

About twenty-five per cent of the total amount of manufactured gas sold is now used by industrial plants in more than 1,200 different ways.

Gas is now used in 7,000,000 cooking appliances, 1,600,000 water heaters, 1,300,000 space heaters and 8,800,000 incandescent burners.

It takes 70,000 miles of gas mains to supply 4,600 cities, towns and villages with gas service.

The gas industry uses more than 10,000,000 tons of coal and about 900,000,000 gallons of oil a year.

In the last ten years, the total production of manufactured gas has increased one hundred per cent, while during the same period the consumption of gas for industrial heating uses has increased one thousand per cent.

The first gas company in the United States was established at Baltimore in 1816. There are now 966 gas utilities in operation.

During the present year the gas industry will carry on a tremendous building program in the financing of which there will be needed hundreds of millions of dollars of new capital.

During the last two years coal strikes and transportation difficulties have caused thousands of plants and shops to change from solid fuel to gas. Official figures obtained by the American Gas Association leave no doubt that manufactured gas will be the future fuel of industry.

Facts About the Convention

(Use them in your house organ, special bulletins, sales letters, trade paper and national magazine advertisements, etc., etc.)

Attraction: Fifth Annual Convention and Exhibition of the American Gas Association, the national organization of the manufactured gas industry

Time: October 15 to 19, 1923.

Place: Steel Pier, Atlantic City, N. J. Same place as last year.

Attendance last year: 2,700.

Estimated attendance this year: 3,500 to 4,000.

Exhibition space last year: 19,500 square feet.

Exhibition space this year: 27,500 square feet.

Exhibitors last year: 136.

Exhibitors this year: 180 or more.

Exhibition segregated into: 1. domestic appliances—ranges, water heaters, room heaters, lighting fixtures, etc., etc. 2. Apparatus, supplies, safety devices, industrial appliances, etc. 3. Meters, instruments, accessories, publications and labor-saving devices.

Other interesting exhibits: Accounting Section, Bureau of Mines, Bureau of Standards.

Exhibits boardwalk front of pier: One side of pier will contain a model gas kitchen with appliances in actual operation; other side will contain an interesting industrial gas exhibit under the supervision of the newly formed Industrial Gas Section of the Association.

Convention program: General and sectional meetings have the strongest programs in years. Details furnished later.

Entertainment: One night we take possession of Steeplechase Pier and operate it ourselves. This is a new stunt that promises some real fun. There will be dancing in the Ballrooms of the Steel and Steeplechase piers, concerts, theatre parties, a card and tea party for the ladies and a thousand and one other forms of entertainment so easy to be had at Atlantic City.

For the Public. Residents and visitors to Atlantic City will be admitted to the Exhibition during certain stated hours. Domestic science lectures will be repeated as last year and other features made public later on.

In Memoriam

Hugo B. Reinach, Assistant Treasurer of the Consolidated Gas Company of New York.

INDUSTRIAL GAS SECTION

R. M. SEARLE, Chairman — E. J. STEPHANY, Vice-Chairman

C. W. BERGHORN, Jr., Secretary

The New Section

IN ACCORDANCE with the provisions of the Constitution of the Association, the recent application for the formation of an Industrial Gas Section was duly placed before the entire membership for vote and resulted in a proportion of 19 to 1 in favor of such formation out of a total of nearly 1000 votes cast.

Consequently, on June 6, 1923, an organization meeting was held in New York City which was attended by some 125 enthusiastic members. Their enthusiasm was justified, for as Colonel Fogg said—

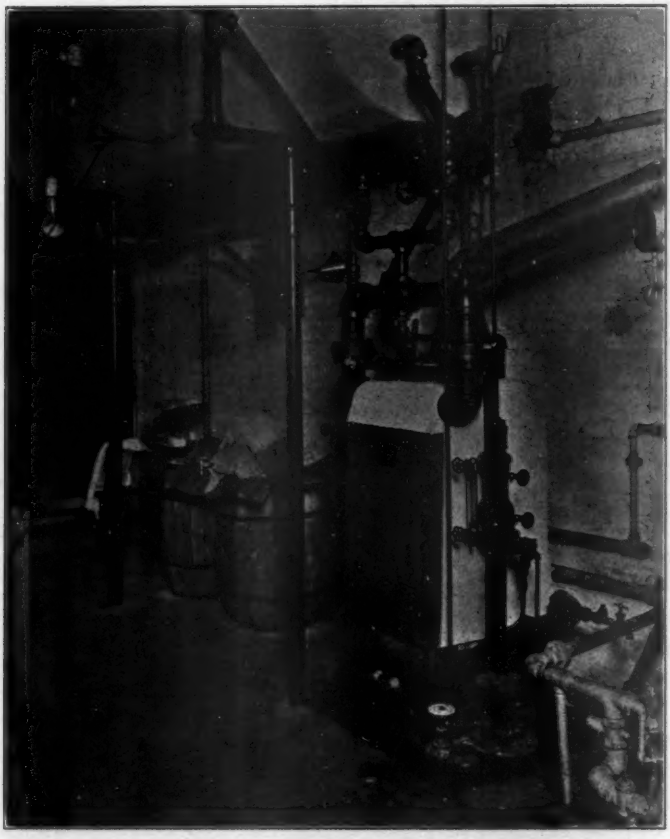
"In all of the Association's activities there will be none more important than that which will be undertaken by the new section which comes officially into active existence today. Our total sales this year will probably approximate 350 billion cubic feet. In round numbers, twenty per cent of that is gas sold for industrial uses. The time when industrial gas will represent half of our total sales and that total will be double its present volume is not far away. It is not a matter of many years, but of several only. Remember that, in our last development, the last ten years have witnessed the doubling in volume of sales of manufactured gas in this country. There are other factors that will contribute to that end. The question of scientific rates is one. The standard of quality and method under which our product is to be served is a most important one but we are drawing nearer and nearer to a solution of these problems.

"There will rest upon you gentlemen who have initiated this movement a large responsibility, but in this group are to be found the men who made the application of gas to industrial purposes their special study and they will bring to the task the knowledge, experience and enthusiasm which are necessary to and will surely bring success.

"You will find in the officers and in the Executive Board of the Association, and you will also find in Association Headquarters, a group of men who are in the fullest sympathy with your purpose, and it is as representing them that I assure you of the strongest support and all the help that we can give you at all times."

The meeting then proceeded to the election of officers of the new section. The names of Mr. R. M. Searle, Rochester, N. Y., and Mr. E. J. Stephany, Pittsburgh, Pa., were placed in nomination by the Nominating Committee for Chairman and Vice-Chairman respectively and they were unanimously elected.

The balance of the meeting was devoted to the discussion of the activities of the new section during the balance of the year. Vice-Chairman Stephany outlined the work of the old Industrial Gas Committee, stating that this would undoubtedly be carried through with the probability that this old Committee would form the nucleus of the new Managing Committee of the Section. In addition, a program would be prepared for the coming Convention and a large representation of industrial exhibitors sought.



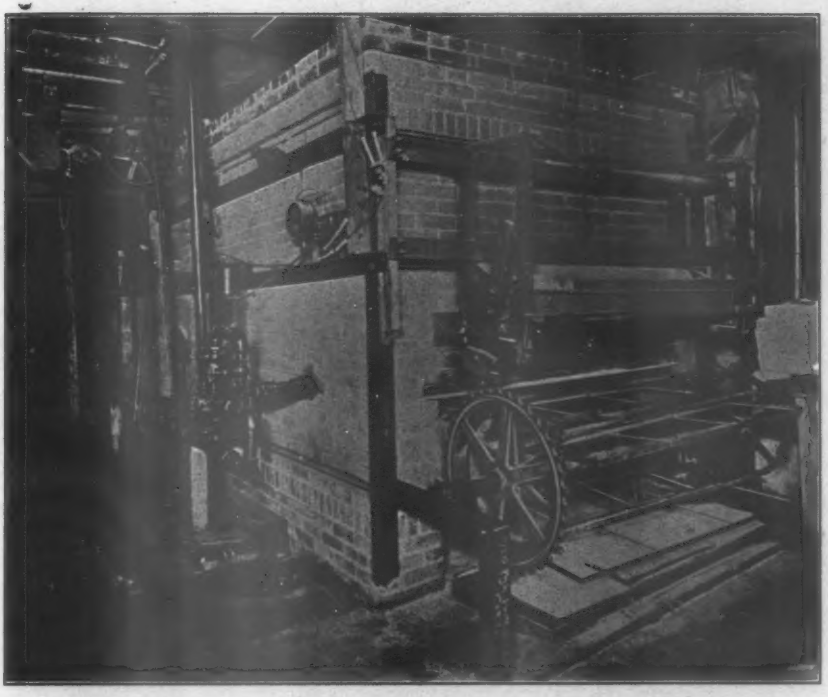
When Every Day is Wash Day

An indirect storage hot water system installed in a laundry and consisting of—

A gas-fired steam boiler connected to a 525-gal. storage tank.

Automatic control using thermostat, low water cut-off, automatic feed and fuel control.

For further information apply to A. G. A. Headquarters.



Pretzel Baking by Gas

A conveyor type oven used to bake pretzels.

Baking chamber—5'-7" x 14'-0" x 6'-0".

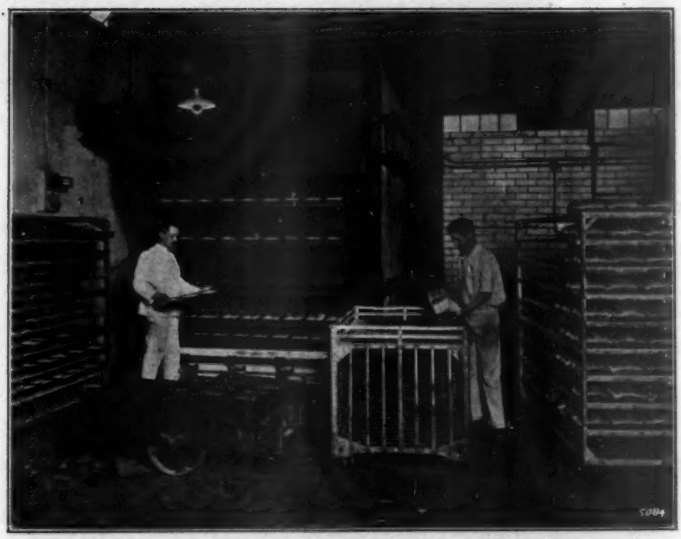
Temperature control—Automatic.

Capacity—360-375 lbs. per hr.

Monthly gas consumption—105,000 cu. ft.

For further information apply to A. G. A. Headquarters.

Before



After

Gas Displaces Coal

The four 12′ x 14′ coal fired ovens shown above were displaced by

The one traveling direct fired gas oven shown below.
Capacity, 2000 lbs. per hr.
For further information apply to A. G. A. Headquarters.

COMMERCIAL SECTION

WILLIAM GOULD, Chairman — J. E. DAVIES, Vice-Chairman

LOUIS STOTZ, Secretary

MANAGING COMMITTEE—1923

BARNES, CYRUS, Boston, Mass.
BARTLETT, C. E., Philadelphia, Pa.
BURKE, E. J., Indianapolis, Ind. (Indiana)
COEL, W. F., Mexico, Mo. (Missouri)
CRAPTS, H. C., Pittsfield, Mass. (N. E. Gas Eng.)
CRANESHAW, J. W., Allentown, Pa. (Pennsylvania)
CRAWFORD, H. M., San Francisco, Cal. (Pacific Coast)
DOBBINS, H. A., Mt. Vernon, N. Y. (Empire State G. & E.)
DUTTON, L. R., Jenkintown, Pa.
EVES, PHILMER, New Haven, Conn.
FLAUTT, J. J., New Orleans, La. (South Central)
GOSS, A. J., Ottumwa, Ia. (Iowa)
HANLAN, J. F., Newark, N. J.
HUMPHREY, H. E., New York, N. Y.
JOHNSON, W. B., Toronto, Can. (Canadian)
JONES, JACOB P., Bridgeton, N. J. (New Jersey)
KAHN, B. B., Hamilton, Ohio.
KNAPP, F. H., Pittsburgh, Pa.
LEARNED, J. G., Chicago, Ill. (Illinois)
McDONNOLD, H. E., Greenville, S. C. (Southern)
MacSWEENEY, J. P., Rochester, N. Y.
MILENER, E. D., Baltimore, Md.
MURRAY, J. J., Biddeford, Me.
MYERS, J. B., Philadelphia, Pa.
NEWMAN, H. H., Trenton, N. J.
POLLITT, L. I., Baltimore, Md.
POST, A. P., Philadelphia, Pa.
QUINN, JOHN J., Quincy, Mass. (Gas Sales of N. E.)
RASCH, W. T., New York, N. Y.
SCHROEDER, A. G., Grand Rapids, Mich. (Michigan)
SMITH, D. R., Baltimore, Md.
STANNARD, C. N., Denver, Col.
STEPHANY, E. J., Pittsburgh, Pa.
STETSER, J. R., Gloucester, N. J.
ST. JOHN, JOHN, Madison, Wis. (Wisconsin)
TAYLOR, J. D., Baltimore, Md.

CHAIRMEN OF SECTION COMMITTEES ORGANIZED TO DATE

Cooperation with Architects and Builders—R. S. Doull, New York, N. Y.
Cooperation with the Plumber and Heating Dealer—F. H. Knapp, Pittsburgh, Pa.
Home Economics Service Bureau—Philmer Eves, New Haven, Conn.
Retail Pricing—A. P. Post, Philadelphia, Pa.
Sales Stimulation—J. E. Davies, Chicago, Ill.

Gas Company and Plumbing Dealer Co-operation

A statement of conclusions reached and recommendations offered by the Committee on Cooperation with the Plumbing and Heating Dealer.

THIS IS by no means a new subject but it is of sufficient importance and far-reaching influence as to be worthy of special attention.

A cooperative arrangement between the gas company and the plumbing dealer must assure reciprocal benefits and profitable and increased sales for both.

A mutually satisfactory agreement would, in its practical application, tend to

1. Increase the volume of gas appliance business for the plumber and the gas company.

2. Eliminate the sale and installation of cheap and inefficient appliances.

3. Establish in the minds of the public a higher regard for gas service and standard appliances, and confidence in the merchandiser.

Safety is a most important factor in connection with the selection and installation of gas appliances. There should be a clear understanding between the gas company and the plumber as to approved and safe methods of installation and agreement should be reached with respect

to whatever rules may be adopted governing the question of flue connections. Attention is also directed to the importance of offering nothing but standard appliances—quality merchandise—at prices which will be fair to the public and allow the seller to recover his necessary costs plus a legitimate profit.

The GAS COMPANY is in a position to offer the plumbing dealer,—

- The assistance of its salesmen to help close dealer sales.
- The loan of suitable stock for the dealer's window display and show room.
- Assistance in preparing window displays.
- Sales literature imprinted with the dealer's name.
- Appliances from stock at prices which will enable the plumbing dealer to meet his overhead and make a fair profit.

The PLUMBING DEALER in return should,—

- Agree to handle only standard appliances or such as are built to present or subsequent A. G. A. Specifications.
- Make installations, particularly of automatic water heaters, in accordance with the gas company's approved practice.
- Follow the gas company's rules for the piping of buildings and homes.

The human equation is a decisive factor in the satisfactory operation of any cooperative arrangement, and even among competitors we find their business relations more harmonious when the individuals are acquainted one with the other,—so it must be in this case.

The responsibility of initiating the move for these two interests to cooperate and work together is shared equally by the gas company and the plumbing dealer, but for the purpose of making a start we will assume that the former will take the first step.

The secretary of the local chapter of the Master Plumbers' Association, wherever such a group exists, as well as each individual plumbing dealer in the community should be interviewed, the advantages of such cooperation explained to them, definite assurance given of the company's willingness to cooperate, and an invitation extended to attend a subsequent meeting of all the plumbing dealers and gas company representatives for further discussion of the subject and to perfect a working organization.

A special effort should be made to have present, at this first meeting, every plumbing dealer in the community. The gas company should be adequately represented by the management, the head of the Sales Department and members of his organization, as well as other departments.

Make clear the purpose of the meeting and remove any differences which may exist between the company and the dealers. There can be only one reasonable basis for cooperation of this character; it must include fair-minded consideration of the interests of each side and result in tangible benefits to both.

This Committee cannot suggest a detailed plan which would be operative in every situation. Local conditions and policies vary to such an extent as to make this inadvisable. There are, however, several working agreements in operation between gas companies and their local plumbing dealers, the results of which have proven that such a plan is feasible and distinctly to the advantage of both interests and the public. The following may be referred to in this connection:—

*F. A. Woodhead, Arlington Gas Light Co., Arlington, Mass.
E. A. Willard, Portland Gas Light Company, Portland, Maine.
*E. W. Allen, Lynn Gas & Electric Co., Lynn, Massachusetts.
R. A. Koehler, Public Service Gas Company, Newark, N. J.
J. H. Dill, Consolidated Gas, Electric Light & Power Co., Baltimore, Md.
W. W. Flanders, Tacoma Gas Company, Tacoma, Washington.

Representatives of the American Gas Association have appeared before the members of the National Association of Master Plumbers, and the secretaries of its local chapters, and, in turn, the members of the American Gas Association have been addressed by representatives of the Master Plumbers' Association, who publicly expressed on behalf of their respective associations the hope for a better understanding and close cooperation of these two interests.

Your committee is strongly of the opinion that the adoption of these recommendations will be of real benefit to the gas companies, the plumbing dealers, and the public, and that steps should be taken to perfect the necessary arrangements to put such plans into effect in every community.

*Gas Age-Record, issue of January 20, 1923, pages 81 and 95, contain further information as to the Lynn plan and the plan in effect at Arlington is described in a paper by Mr. Woodhead presented at the January meeting of the New England Association of Gas Engineers.

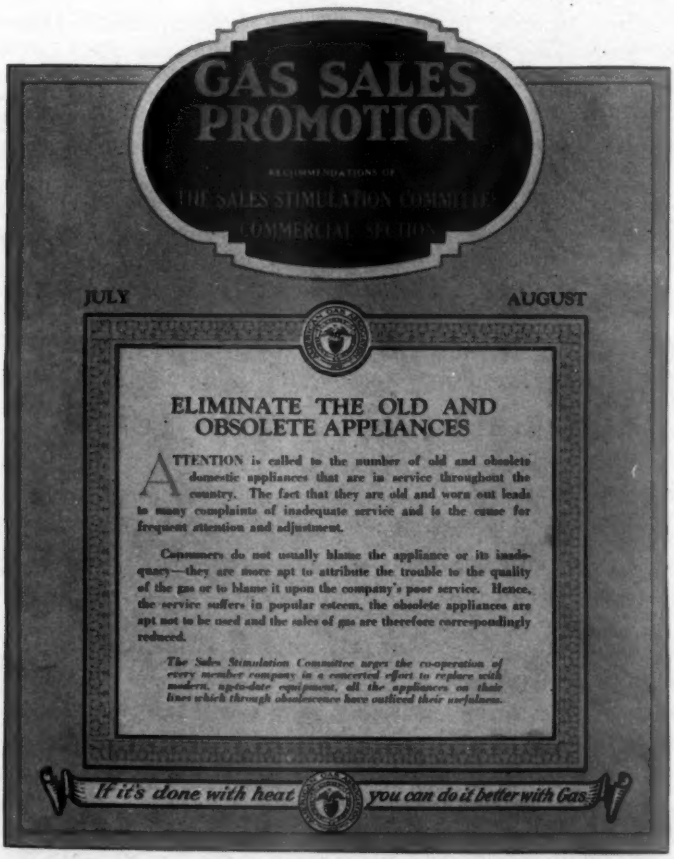
Educating the Summer Tourist

A novel idea for spreading the gospel of gas is being carried out this year by the Valparaiso Lighting Company at Valparaiso, Indiana. It consists of installing hot plates with prepayment meters in the tourist camp located there.

In this way these summer tourists, many of whom have never used gas before, are educated to its many advantages and conveniences first hand. It is a very simple and yet a most effective method and this company, as well as the Utah Gas and Coke Company at Salt Lake City, who instituted this type of educational propaganda last year, are to be complimented for this move.

Obsolete Appliances Retard Gas Sales

AFTER the Fourth of July the merchant experiences a perceptible lull in business, a condition which exists in the gas business just as in other lines. Presumably everyone who intended to purchase a new gas range or water heater this season has already done so and is thinking about other things, as for instance, a trip to the seashore or mountains,—thinking about the great outdoor world and saving up for that two weeks' vacation. We think along these lines, don't we? Well, the average person thinks about the same way as we do.


GAS SALES PROMOTION
RECOMMENDATIONS OF
THE SALES STIMULATION COMMITTEE
COMMERCIAL SECTION
JULY
AUGUST
ELIMINATE THE OLD AND OBSOLETE APPLIANCES
ATTENTION is called to the number of old and obsolete domestic appliances that are in service throughout the country. The fact that they are old and worn out leads to many complaints of inadequate service and is the cause for frequent attention and adjustment.
Consumers do not usually blame the appliance or its inadequacy—they are more apt to attribute the trouble to the quality of the gas or to blame it upon the company's poor service. Hence, the service suffers in popular esteem, the obsolete appliances are apt not to be used and the sales of gas are therefore correspondingly reduced.
The Sales Stimulation Committee urges the co-operation of every member company in a concerted effort to replace with modern, up-to-date equipment, all the appliances on their lines which through obsolescence have outlived their usefulness.
If it's done with heat
you can do it better with Gas

But there is a percentage of the population in every community with a merchandising instinct which prompts them to await a more favorable market, for the time when the merchant is worrying about the unsold stock on his shelves. Knowing he must sell those straw hats at a sacrifice or carry them over until next season, when they will probably be out of style, he slashes prices and the waiting customer is induced to purchase.

Summertime is a particularly trying time for the gas appliance merchandiser. Few people are willing to look at our goods and the salesman finds a lack of interest at every door, so there is nothing left to do but prescribe a stimulus, a business stimulant as it were.

The plan of the Sales Stimulation Committe in their recently issued Bulletin on Eliminating the Old and Obsolete Appliances from the lines was prepared to meet just such a summer lull as you have undoubtedly seen in the past.

Members may have, for the asking, a copy of the plan which it is anticipated will be adopted by a large number of our member companies this summer. Send for a copy if you have not seen this Bulletin.

University of Michigan's Course in Engineering

The development of the interest in Gas Engineering at the University of Michigan is due largely to the encouragement of the Michigan State Gas Association which established a fellowship in Gas Engineering in 1900 and maintained it constantly until the war. Opportunity is offered in the graduate courses of the Gas Engineering Group to make a more detailed study of gas manufacture and utilization both in the classroom and at gas works. The Gas Engineering Group contains options from the courses in gas manufacture and chemical engineering machinery in the department of Chemical Engineering; gas engines, power plants, and the valuation of public utilities in the department of Mechanical Engineering; electrical distribution and illumination in the department of Electrical Engineering; and business organization and management in the department of Economics.

The demand for men by the gas industries is a steady one and there is every prospect that this industry will expand rapidly in the next decade. From University Bulletin—University of Michigan.

Appliance Sales Per Meter Contest

APPROXIMATELY two hundred member gas companies are reporting to the Association their monthly dollar appliance sales per meter, mention of which was made in the April issue of the Monthly.

A study of these reports is most illuminating and discloses some rather remarkable results, as shown by the accompanying schedule of the ten leaders in the Northern and Southern groups.

The first and second company in each group will be awarded a prize which will be presented publicly at the Atlantic City Convention.

The contest is based on the best showing for the twelve months' period ending August 31, 1923. Special blanks are available for reporting your monthly appliance sales. If your company has not yet sent in this information for the last four months of 1922, and to date in 1923, do so at once.

Standing of first ten companies which have reported for the eight months ending April 30th.

	Northern Group	*Meters*	*Sales per Meter*
1.	Emporia Gas Company, Emporia, Kansas	1,007	$1.24
2.	North Shore Gas Co., Waukegan, Illinois	14,437	1.16
3.	Wisconsin Valley Electric Co., Stevens Point, Wis.	1,032	.99
4.	Freeport Gas Co., Freeport, Ill.	5,147	.96
5.	Madison Gas & Electric Co., Madison, Wis	10,564	.90
6.	Lexington Gas Co., Lexington, Mass.	555	.87
7.	Trinidad E. T. Ry. & Gas Co., Trinidad, Colo.	813	.85
8.	Elkhart Gas & Fuel Co., Elkhart, Ind.	5,429	.82
9.	Arlington Gas Light Co., Arlington, Mass.	9,051	.78
10.	Public Service Gas Co., Princeton, N. J.	1,494	.77 tie
	Ottumwa Gas Co., Ottumwa, Ia.	4,444	.77 tie
	Southern Group		
1.	Orlando Gas Co., Orlando, Fla.	3,791	$1.92
2.	Rocky Mount Public Works, Rocky Mount, N. C.	2,316	1.76
3.	Southern Public Utilities Co., Charlotte, N. C.	4,863	1.52
4.	Baton Rouge Elec. Co., Baton Rouge, La.	2,229	1.30
5.	Roanoke Gas Light Co., Roanoke, Va.	6,275	1.01
6.	Albuquerque Gas & Elec. Co., Albuquerque, N. Mex.	1,575	.71
7.	El Paso Gas Co., El Paso, Texas	12,185	.56
8.	Pensacola Gas Co., Pensacola, Fla.	3,277	.55
9.	Charleston Cons. Ry. & Lt. Co., Charleston, S. C.	8,470	.50
10.	Savannah Gas Co., Savannah, Ga.	9,660	.44

In Memoriam

John A. Britton, Vice-President and General Manager of the Pacific Gas and Electric Company, died at San Francisco, on June twenty-ninth. Mr. Britton was an outstanding figure in the public utility business and an indefatigable worker in its behalf.

How to Capitalize Unlucky Friday—July the Thirteenth

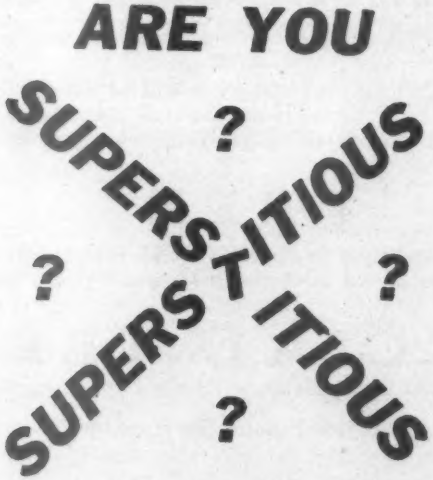
A RATHER novel Friday, the 13th, sale was recently undertaken in April by Mr. J. A. Forney, Gas Superintendent of the Charlotte, N. C., Branch of the Southern Public Utilities Company.

This effort was remarkably successful, the originality of the advertising being largely responsible for the very satisfactory sales which resulted.

A small 2-column, 5-inch advertisement was inserted in two papers, morning and evening, from April 1st to 10th inclusive, with a 4-column, 16-inch advertisement in the same papers on the 11th, 12th, and 13th. A handbill reproduction of the small two-column ad was also distributed on Saturday, April 7th, from an automobile parked in town, at the ball park and in homes on new main extensions. This publicity was supplemented by an attractive window display, with substantially the same announcement on a drop curtain as the 4-column advertisement.

Notwithstanding the fact that the weather conditions were unsettled, rain starting in the morning and continuing throughout the afternoon, the sales on the 13th amounted to 42 ranges, 5 tank and 5 automatic water heaters.

The pulling power of this novel advertising was clearly demonstrated by the appearance of many ladies at the company's office as early as 7.30 in the morn-



Watch for Answer Wednesday, April 11th, 1923

ing. The office opened at 8.30 and in the first hour a total of 18 ranges, 3 tank and 2 automatic water heaters were sold.

We have another Friday, the 13th, in July. Advantage of this may be taken to tie in with the Sales Stimulation Committee's plan for a campaign in July and August to eliminate all the old and obsolete gas appliances from the lines, as described in a special sales bulletin recently distributed to our member companies, copies of which may be had on request to the Association Headquarters.

Are You Superstitious?

Is Friday 13th Your Lucky or Unlucky Day?

On FRIDAY, 13TH, all gas burning appliances will be reduced 13%

——OR——.

Our offer of $10.00 for your old stove will be changed for this ONE DAY ONLY—FRIDAY, 13TH—and an allowance of $13.00 will be made for any old coal, oil or gas range—to apply on the purchase of a new range.

FREE

To the FIRST and then to each THIRTEENTH purchaser of a gas range—on either of the above offers-we will give a premium worth $13.00.

SPECIAL TERMS

$5.00 Cash—Balance 13 Monthly Payments

"Service Follows the Appliance"

Southern Public Utilities Co.

TECHNICAL SECTION

F. C. WEBER, Chairman — H. C. WEHNERT, Vice-Chairman

H. W. HARTMAN, Secretary

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PRICHARD, C. R., Lowell, Mass.
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VITTINGHOFF, H., Boston, Mass.
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CHAIRMEN OF SECTION COMMITTEES ORGANIZED TO DATE

Carbonization and Complete Gasification of Coal—R. G. PORTER, Chester, Pa.
Cast Iron Pipe Standards—WALTON FORSTALL, Philadelphia, Pa.
Chemical—A. C. FIELDNER, Pittsburgh, Pa.
Coke—V. A. MILLER, Rochester, N. Y.
Deposits in Gas Pipes and Meters—DR. R. L. BROWN, Pittsburgh, Pa.
Disposal of Waste from Gas Plants—L. J. WILLIEN, Boston, Mass.
Distribution Design—R. G. GRISWOLD, New York, N. Y.
Fundamentals of Condensing and Scrubbing—W. H. EARLE, Rochester, N. Y.
Holder—H. E. BATES, Chicago, Ill.
Measurements of Large Volumes of Gas—M. E. BENESH, Chicago, Ill.
Nominating—C. N. CHUBB, Davenport, Ia.
Program of Research—DR. J. F. WING, Boston, Mass.
Purification—DR. A. R. POWELL, Pittsburgh, Pa.
Refractory Materials—W. H. FULWEILER, Philadelphia, Pa.
Specifications for Gas Coal—H. J. ROSE, Pittsburgh, Pa.
Standardization of Capacities of Consumers' Meters—WALTON FORSTALL, Philadelphia, Pa.

A Study of Some Physical Laws Governing the Carbonization of Coal

A. W. WARNER, Philadelphia Suburban Gas & Electric Co., Chester, Pa.

This article by Mr. Warner has been prepared by him as a paper for presentation at the A. G. A. Convention, and also forms part of the program of the Committee on Carbonization and Complete Gasification of Coal. So many interesting considerations related to carbonization are brought out that the paper is being published in this issue so that our members can give it the careful study that it deserves in advance of the Convention. (EDITOR'S NOTE.)

THE YEARS of experience in the carbonization and gasification of coking coal have brought forth three fundamental processes, typified by coke ovens, low temperature carbonization and complete gasification—prime quality coke, prime quality oils and maximum gaseous B.t.u. Between these conceptions are a multitude of variations. From a ton of coal the coke oven produces some 10,000 cu. ft. of 550 B.t.u. gas, 12 gal. of degraded tar and the best grade of low volatile coke; the low temperature process produces some 4000 cu. ft. of 1000 B.t.u. gas, 23 gal. of oils, and a high volatile coke or coalite residue; while complete gasifica-

tion produces gas of varying volume and composition, 23 gal. of oil and no coke. The gas from this last process is necessarily of too low a B.t.u. quality to distribute economically in our present distribution systems.

In studying the basic physical and chemical laws governing the phenomena of carbonization, it would appear that a fourth distinct and fundamental process is possible whereby the low volatile close-grained coke of the coke oven may be retained, the 23 gal. of low temperature and complete gasification oil, and also a yield of 8000 cu. ft. of 700 B.t.u. gas. This gas yield, it would appear, can be obtained by adding to 4000 cu. ft. of low temperature gas, the gas from the high volatile coke of the low temperature residue.

We have devised two pieces of crude apparatus to show how a fourth fundamental process can be applied to the carbonization of coking coal. From the experiments with this apparatus we have deduced the following five basic laws governing carbonization:

I. If removal of volatile matter from coking coal were the only consideration, the high heats commonly used in carbonization are unnecessary.

II. The condensible hydrocarbons of coal are more valuable as raw products the nearer to their primary state they exist because no way has been found to convert any but a meager portion of them into permanent gas.

III. The less the cracking, and the more the distillation of condensible hydrocarbons occurs, the less will be the intensity of heat required to drive off the volatile matter of coal.

IV. The less the heat through which the gases from the noncondensible hydrocarbons must pass in leaving the retort, the richer will be the gases and the greater the B.t.u. feet from this source per unit of coal.

V. The closer the ideals of IV are met, the greater will be the possible cubic feet of mixed gas of a determined B.t.u. per unit of coal.

* * * *

I. If the removal of volatile matter from coking coal were the only consideration, the high heats commonly used in carbonization are unnecessary.

* * * *

To bring this fact clearly before the eye, low temperature oils from a given coal were collected having a boiling point range from 660° to 750°. These temperatures were selected because R. V. Wheeler and M. J. Burgess have drawn the following conclusions from their experiments on low temperature distillation of gas coal:

"That liquids other than water begin to distill over as a reddish brown oil at 600° F. but inasmuch as its appearance is unaccompanied by any marked evolution of gas, it is liquidated out of the coal conglomerate rather than as a decomposition product of the coal substance."

"That a critical decomposition point is reached at about 660° F. which is marked by a rapid increase in the gas evolution and the appearance of much viscous oil."

With these 660°-750° oils at hand some interesting physical experiments suggest themselves to the curious-minded. These oils were placed in a glass distilling flask in the neck of which was suspended a fly screen wire basket containing some twelve grams of coal. As these oils were made to slowly distill over, the coal was naturally caused to slowly rise through a predetermined temperature range (660°-750°) and further to do so in an intensified atmosphere of

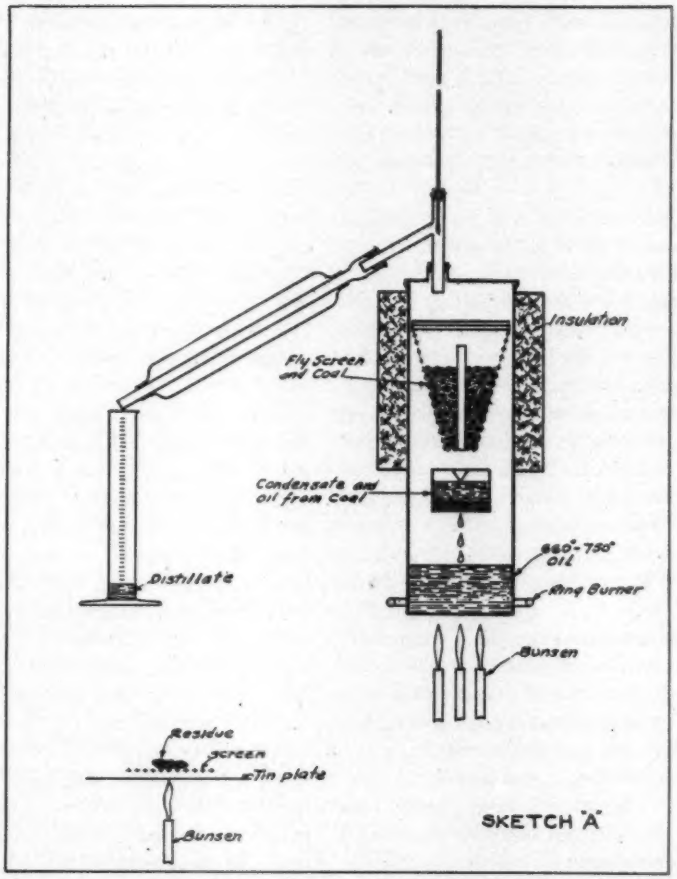
the same liquid and vapor hydrocarbons as were present when these oils were driven from the retort. Thus it was possible to study under glass this critical decomposition point (660°) where all the physical characteristics could be observed by the eye.

Gas coal treated in this way suddenly commences at 660° to come out through the wire meshes and to slowly drop off in bubbling mats into the boiling oil. At the same time the condensing oils themselves assume a dirty brown color. This phenomena continues with rising temperatures until the oils are distilled over. The gas evolution becomes more and more pronounced. Some vapors evolved at this time settle toward the oil surface, which is not surprising when you consider that ethane has a specific gravity of 1.038. The residue in the basket was found to be a dryish, greasy graphite-like substance possessing no coking characteristics but rich in gas-making constituents. The oils, containing the wash from the coal, when carried to oil coke left a residue rich in gas and possessing considerable coke-forming constituents. A tremendous amount of lamp black was formed in burning any of these gas-making constituents.

We next built a tar still 5″ dia. and 20″ high, the top of which took the same lid and glass-distilling apparatus as an ordinary tar still. The sides were thoroughly insulated except the first seven inches from the bottom. A fly screen cone-shaped basket provided with a ½″ tube up through its center was made. Suspended from the bottom of this was a tin boat. 600 cc. of 660°-750° oil were placed in the bottom of the still and 180 grams of coal were placed in the basket. The general arrangement and method of heating are clearly shown in sketch "A."

Two tests were run with this apparatus. In each case the coal was screened —through ⅜″ mesh and remaining on the fly screen which formed the basket used in this test. In the first test, as soon as a steady distillation was established (30 cc. of oil and water), the charge was pulled. We wished to look at the coal and determine the amount of oil it had absorbed. The coal was entirely softened. The lumps had disappeared into a conglomerate tarry mass which could be stirred when hot. The coal had absorbed 85 cc. of oil. In the second test, distillation was continued until 200 cc. of oil had come over. It was found that the 200 cc. of oil had refluxed and come over before 650° was reached. Upon redistillation in a glass flask, 100 cc. came over under 650° while 80 cc. came over above 650° leaving a 20 cc. equivalent residue in the flask and for distillation loss. The coal in the basket had shrunk to less than half the original volume and weight. The boat (which was empty at the start) was full, its capacity being 175 cc. of oils. Those oils on top distilled at 670°, while in the bottom of the boat was a thick sediment of viscous oil resembling pitch which had melted and run down from the coal. In the bottom of the still were 300 cc. of heavy black tar. From the boiling point of the oil in the boat it is apparent that, up to the conclusion of the test, no heat above 670° had been applied to the coal.

The residue both in the basket and in the boat contained much volatile matter—practically all non-condensible. To remove this volatile matter and to get some idea of the intensity of the heat required to drive it off, a piece of sheet tin was heated to a very dull red over a bunsen burner. About ⅛″ above this sheet, which was large enough to avoid danger of ig-



niting the gases, was placed a piece of fly screen. On this screen were placed the two samples of residue. The gas evolution was rapid, the pieces of coal residue retaining their original cold color until the gas had been driven off. Thereupon they instantly came to a glow—a particle here and a particle there according to which particle was first freed from its volatile. In neither residue were there any signs of condensible vapors or lampblack. This heat was not over 1050° F. and was capable of taking the entire residue to carbon and ash.

Before leaving these tests it might not be amiss to describe another phase of carbonization studied with this type of apparatus. Certain low temperature oils below the 660° boiling point contain upwards of 30% tar acids. These acids (boiling point up to 450°) were separated from the oil in the usual way and placed in a glass distilling flask provided with a wire basket as in the previous test. As these acids were caused to slowly distill over, the coal became thoroughly washed with the acids of each boiling point. As long as oxygen was present,

these acids kept washing out from the coal a dirty brown substance. As often as the distillation was stopped and air could reach the basket, the restarting of distillation caused a further washing. If a small stream of oxygen were introduced into the space above the boiling acids, the wash flow was continuous. At no time up to 4 hours did the washing cease. These acids taken to coke, left a residue which when heated in a crucible puffed up into a hornet's nest not unlike a Fourth of July "snake in the grass." The coke structure of the remaining coal was materially improved by this washing. This frothing residue added to ordinary boiler coal produced a very fine coke formation in the crucible test. This test opens a line of thought as to the influence of the high oxygen content of Illinois coals on their coke formation.

We, therefore, come to the conclusion that at a temperature under 700° F. coal can be completely softened and its coking properties disappear. Under certain conditions, a heat under 1050° F. can drive off practically all of the volatile matter from coal.

* * * *

II. The condensible hydrocarbons of coal are more valuable as raw products the nearer to their primary state they exist because no way has been found of converting any but a meager portion of them into gas.

* * * *

The primary tars from coal are largely high boiling point oils. The lighter constituents we usually associate with coal tar products are products of later decomposition which have left behind free carbon as well as still higher vaporization point residues. Once these primary oils are separated from the coal in the primary stage, they can be more accurately controlled for further splitting up into products that may be desired in special apparatus designed for this purpose than in any high temperature carbonizing process known. In low temperature coal distillation or its equivalent, there is obtained at least twice the tar yield that high temperature gives. The nearer the primary stage the oils are obtained, the higher the proportion and content of tar acids, creosoting oils, anthracene, etc., will be before pitch of a desired quality is obtained. In our experiments we have produced from the same coal by varying the temperatures of carbonization and the retort atmosphere, tars distilling 97% oil and 3% oil coke, down to tars distilling 30% oil and 70% coke.

Let us take a fair tar sample—79% oil and 21% oil coke. Distillation of this particular oil showed that it was possible to distill 50% as oil and leave a remainder of 145° F. melting point pitch. Two samples of this 50% oil were saved—one sample as distilled over and one sample washed free from its tar acids. These samples were cracked in a gas oil testing machine at 1500° F. in an atmosphere of blue gas with the following results:

@ 1500°	Without tar acids	Including tar acids
Oil per M.	2.90	2.91
B.t.u. mixed gas	406	416
Oil gas per gal.	37.2	46
% to tar	16.4	21.8
Tar	Much Naphthalene	Odor Naphthalene
B.t.u. oil gas	1360	1230
B.t.u. feet per gal.	50,700	56,600
H_2SO_4 absorbs from oil	70%	—

The question has been repeatedly raised as to how much the possible gas yield has been robbed in obtaining the less degraded tars and oils in the various low temperature processes. We can make some approximation from these results if we may assume that these products, sent through the 1500° atmosphere of hydrogen, or their equivalent, were all existent at some time in the ordinary high tem-

perature retort and most of them passed through a temperature range up to and beyond 1500°. They probably could not contribute much more to the final high temperature gas and tar than they did to the blue gas.

Roughly 10 gal. oil—83 lbs. give:

18.0 lbs. tar	22.0%
32.0 lbs. gas	38.0%
33.0 lbs. carbon, etc.	40.0%
83.0 lbs.	100.0%

or possibly 1000 cu. ft. of 566 B.t.u. gas.

This result—1000 cu. ft. of 566 B.t.u. gas tallies closely with the conclusion of most investigators as to the contribution of tars to high temperature gas yields. Therefore, obviously it is far from economical to ruin 83 lbs. of low temperature oils for 1000 cu. ft. of 566 B.t.u. gas equivalent. There must be some way to save low temperature oils and at the same time drive off the rich volatile matter remaining in the coke.

* * * *

III. The less the cracking and the more the distillation of condensible hydrocarbons occurs, the less will be the intensity of the heat required to drive off the volatile matter from the coal.

* * * *

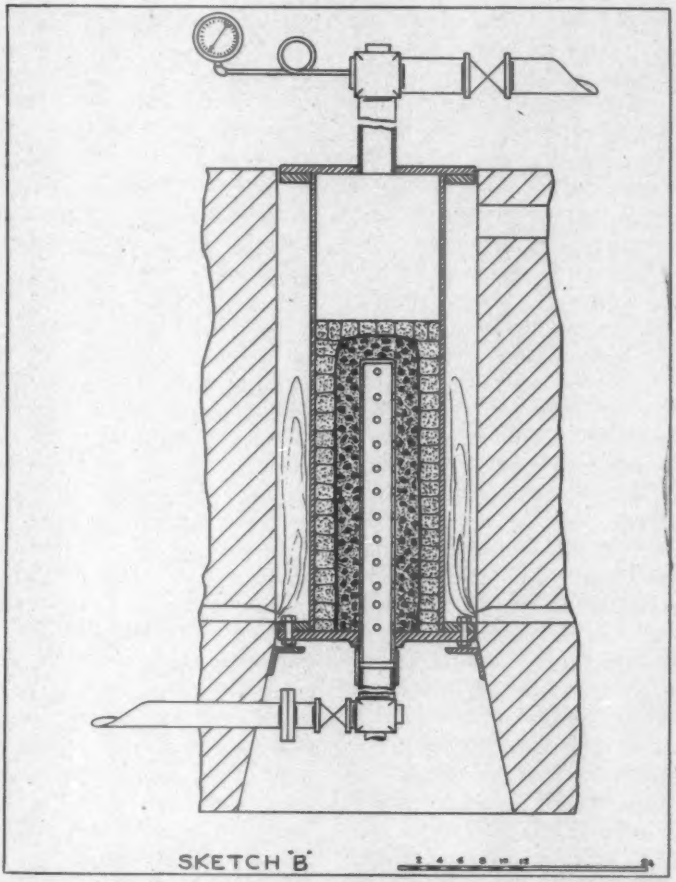
In view of the tar still tests and to carry on the study of the intensity of heat required to drive off volatile matter from coal under various conditions and to study the physical characteristics of the gas, tar and coke—a very simple carbonizing apparatus was designed. This is diagrammatically shown in sketch "B."

In the carbonization of coal in an oven there is formed a plastic film between the coke already formed and the uncarbonized coal. Its temperature must be between 660° and 750°—say 750°. As heat is applied through the inside wall of the retort, this film progresses inwardly toward the center of the charge. This film may at times interpose a resistance of as high as 30" to 40" (water) to the flow of gas and vapors.

(Vide Evans*) This carbonizing apparatus is of such design as to cause this film to form an inverted bell in the center of which is placed a vented duct. The outlet from this duct is lead from the bottom so as to be protected from the action of any external heat. Through this outlet the inwardly traveling heat drives off the oils and vapors borne up to this 750° temperatures as well as such gases as find their easiest egress by this path of travel. The residue of this plastic film is simultaneously carbonized at some higher temperature. A top retort offtake provides a means of collecting and removing such of these gases and vapors as find their easiest egress through this path. Suitable exhausting and scrubbing means must be provided to take care of the gas.

It is apparent that this apparatus gives us a means of studying the influence of distillation and cracking on the intensity of heat required and the final mode of existence of the products. If the top outlet be closed and a slight exhaust suction be maintained in the inner duct, pressure readings under the top lid will give some idea of the resistance to flow of the plastic film. At times this rose to 12" hg., instead of bringing coal through a varying range of temperatures we passed a varying range of temperatures through a stationary charge of coal. By establishing the proper pressure balance between the top and bottom outlets, we could recover practically a full yield of low temperature oils and drive off the volatile matter from the remainder at any temperature desired from 1000° F.

*Technical Section, Sessions of the American Gas Association, Vol. II, 1920, pages 116 and 135.



up. This lower possible temperature range was available because little heat was used in uselessly cracking the low temperature oils and revaporizing the heavy residues therefrom. We could throttle the bottom outlet and leave the top outlet open. This enabled us to approach high temperature retort practice. A comparison of the carbonizing time with the same intensity of heat—with and without cracking—indicated how unnecessary are the high heats used in ordinary carbonizing practice. In every test where excessive cracking was avoided, the time of carbonization was cut almost in half.

It is evident that each time a condensible hydrocarbon of a given vaporization point is cracked there ensue three physical products—a light oil, a heavier residue and free carbon. The heavier residue, upon further accession of heat, in turn, splits up into a lighter oil, a still heavier residue and more free carbon. With each accession of heat causing cracking, more and more must become the heat necessary to drive off the final volatile. In such tests as we can be sure

all the condensible hydrocarbons are educted away from the heat, a low temperature incidence drives off practically all the volatile matter from the coal residue right up to the edge of the plastic mass of the carbonizing coal. However, if the pressure conditions be such as to force these vapors out through the heat, the time required for carbonization becomes much greater as well as the amount of residual volatile. A physical separation of the condensible from the non-condensible hydrocarbons it would appear is even superior to a vacuum method of distillation because in a vacuum distillation the conditions in the mass vary according to the coal sizes. (Vide Tozer tests.*) Cracking the primary oils not only wantonly breaks down valuable oils into 4% of gas plus degraded tar and free carbon but also calls for an enormous and useless expenditure of carbonizing heat to obtain any rapidity of throughput at all. Perhaps the following crude test will more clearly bring out this point. A sample of tar—79% oil and 21% oil coke—was distilled in a copper still with the ring burner set above the level of the oil but too low to carry the vapor fast enough to the condenser. This cracking test demonstrated that some 33% of the oil could be distilled over before reaching the temperature of the first drop in the original distillation. However, it was found that only an additional 17% of oil could be distilled before oil coke was reached.

In a carbonizing chamber such as was used in these tests, it is evident that we have indicated one way to carbonize a relatively high amount of coal per square foot of retort surface with comparatively low temperatures at the retort walls and to protect the primary oils to a degree at least approaching the oils of low temperature vacuum carbonization. We pass heat from a constant source of supply through the charge progressively and withdraw the gases and vapors by two paths—one protected from the heat and one exposed to the heat. Therefore, we carry on simultaneously two diametrically opposite gas-making processes. Such inwardly flowing gases and vapors as are condensible, condense and repeatedly come into contact with oils and vapors condensed at lower temperatures. As the inwardly traveling heat progresses, the gases undergo an oil scrubbing treatment. In this way at least all the oils and vapors formed up to 750° (and these include practically all of the condensible hydrocarbons) escape, driving ahead of them all of the water vapor. The coal at the same time receives an acid washing similar to that already described. The outwardly flowing gases, freed from these more unstable, high vaporization residue-leaving constituents, are formed under more ideal gas-forming conditions. These gases and vapors mix with gases of a higher hydrogen content and can be made to pass through the range of rising temperatures most suited to the ultimate formation of stable gas, high in ethane, methane and illuminants.

It has been generally accepted as a fact that the ability of coal to absorb heat is greater than the means of bringing heat to the coal because the heat must fuse or vaporize one particle of coal before it can pass on to the next. We find during the progress of carbonization 900° (2% vol.) coke and 200° coal separated by a plastic film 3/8" thick. This type of carbonizing chamber increases this ability to absorb heat to a maximum by avoiding the needless cracking of condensible hydrocarbons remaining between the source of heat and the film.

*Proceedings of the American Gas Institute, Vol. VIII, 1913, page 669.

The heat penetrating the retort walls and used in high temperature carbonization is usually proportioned about as follows:—

Decomposition and distillation	37½%
Heating gas and vapors	26½%
Sensible heat of the coke	36 %

All gases and oils passing within this film are never reheated above their vaporization point or broken up. The film avoids the necessity of a fixing chamber and becomes as it were a scrubber and a condenser for these gases. All the hot vapors passing from this 750°-200° film must condense and recondense coke-forming constituents. The larger the gas flow in this direction the better must be the coke formation. As all the water has been driven inwardly ahead of the oils, and the frothing constituent has been washed out by the acids, the coke-forming residue must be quiescent and free from frothing. With this method there can be no fear of swelling coals. Nor has mass under these conditions much to do with the coke formation. All gases and vapors passing inwardly must have been heated above 660° and therefore they must give up a major portion of their heat in passing inwardly, helping the film in its inward travel. The fuel required for heating the gases and vapors should be cut away below that required for other high temperature processes. In fact, most of the water in the coal escapes as vapor and not as steam. With this method of egress the oven heat must form the film before raising the temperature of the water vapor, thus preventing too slow volitalization of coke-forming constituents and giving a maximum duration of heat for graphiting the coke. Thus we see that this form of test apparatus can avoid, to the utmost, cracking of the oils and give us a clear idea of the relative intensity of heat required for carbonization with and without cracking. It makes possible the simultaneous production from coking coal of full yield of gas, a full yield of low temperature tars and a low volatile close-grained coke.

* * * *

IV. The less the heat through which the gases from the non-condensible hydrocarbons must pass in leaving the retort, the richer will be gases and the greater will be the B.t.u. feet per unit of coal.

* * * *

So much has been written on the subject of the influence of heat on hydrocarbons and so conflicting have been some of the deductions that it is not necessary at this time to review this subject. However, it is essential to bear in mind that in ordinary methods of high temperature carbonization there seems to be a critical temperature between 1300° and 1500° where the rate of gas evolution and the quantity per pound is nearly double at 1500° what they were at 1300°. Above this critical range of temperature the evolution of hydrogen rapidly increases. The evolution of hydrocarbons of the paraffin series practically has ceased at 1300°. Methane is very stable up to 1500°. The carbonization problem, therefore, has been one of keeping the hydrogen content of the gas as low as possible consistent with driving off the volatile matter, because it has been felt that high hydrogen indicated uneconomic cracking of high B.t.u. gas constituents.

The following table (Jones & Wheeler) clearly shows the influence of heat on low temperature tars.

Low Temperature Tars.

Temp. °Fahr.	Higher Olefines	C_2H_2	C_2H_6	CH_4	H_2
1020	21.7	0.7	18.2	19.6	29.4
1110	12.5	1.3	11.3	33.9	33.6
1200	11.4	0.9	12.0	39.0	27.4
1290	8.2	1.3	2.4	43.8	26.2
1380	0.7	1.2	1.2	56.1	33.2
1470	1.0	1.3	—	33.0	60.7

Professor Lewes shows the influence of heat on the final gas about as follows:—

A ton of coal yielding 4000 cu. ft. of gas under ordinary low (1100°) temperature carbonization, yields 10,000 cu. ft. of gas in high temperature (1800°) horizontal retorts. The residue after low temperature carbonization, heated to 1800°, yields 4500 cu. ft. of gas. We may assume the 10,000 cu. ft. of gas to have been made up as follows:—

Primary gas	4000 cu. ft.	40%
Degradation (11%)	440 cu. ft.	4.4%
Residue in coke	4500 cu. ft.	45.0%
Gasified tar	1060 cu. ft.	10.6%

Our experiments have shown us that it is economical to drive off the volatile from coal at a temperature of 1470° and even lower and that the condensible tars (oils) can, at the same time, be driven off away from the heat at 750° F. and lower. Therefore, referring to the above example, it must be possible to obtain the full gas yield from the non-condensible hydrocarbons with far less degradation of the primary gas. There should be no gasified tar but in its place oil removed at low temperature for more suitable economic uses. An ethane content of 8% is not unusual for gases evolved in these tests with a retort wall temperature of as high as 1470°. Such gas contains absolutely no trace of naphthalene. As the complete range of carbonization from rich low temperature gas to lean gas from the residual volatile is continuously taking place within the narrow range of the plastic film, there is practically no change in the B.t.u. content of the gas from start to finish of the charge. Once these heat reactions (1020°-1470°) on low temperature tars are obviated and degradation of the primary gases is brought to a minimum, the study of gas from the coke residue becomes simplified. The presence of high vaporization point relics of the condensible hydrocarbons in the coking residue from high temperature carbonization so changes the retort atmosphere in the mass as to require high temperature to drive off the remaining volatile. So far as driving off the non-condensible hydrocarbons goes, no such temperature as 1300°-1500° is necessary. The ultimate products of the multitude of constituents in coal are materially influenced by factors other than the distillation temperature. We must know the atmosphere, pressure, and temperature at the moment of formation. As cracking invariably means a loss in gaseous B.t.u., it becomes evident that this process must give the maximum B.t.u. feet of gas from the non-condensible hydrocarbons.

* * * *

V. The less the heat through which the gases from the non-condensible hydrocarbons must pass in leaving the retort, the greater will be the possible cu. ft. of mixed gas of a determined B.t.u. per unit of coal.

* * * *

This last proposition is largely a problem in arithmetic. Owing to the removal in gaseous form of practically all of the volatile residual in the coke, the gas in our tests averages some 700 B.t.u., whereas low temperature gas should average 1000 B.t.u. In the one case we have 4000 cu. ft. @ 1000 B.t.u. plus 4000 cu. ft. of 400 B.t.u. In the other case we have 4000 cu. ft. of 1000 B.t.u. gas and the remainder in the coke residue. Inasmuch as 300 B.t.u. blue gas represents the richest gas that can be made as a dilutant from coke, this 4000 cu. ft. of 400 B.t.u. gas must represent a distinct gain. It can be shown this way:

4000 cu. ft. @ 1000+10,000 cu. ft. @ 300=14,000 @ 500 B.t.u.

8000 cu. ft. @ 700+8,000 cu. ft. @ 300
=16,000 @ 500 B.t.u.

Every time a high B.t.u. gas is broken down into two volumes of low B.t.u. gas and free carbon, the less of 300 B.t.u. blue gas can be used to obtain a determined B.t.u. This same reasoning applies to producer gas or any other substitute or combination.

Conclusions

A tremendous amount of work has been expended in the past by our fraternity, we feel, in trying to get rid of the labor connected with the products of degradation of hydrocarbons. Its work has been too largely with secondary problems, and the fact that degradation and its cost in raw materials have taken place, have not caused enough concern. Had the presence of these troublesome products not caused labor costs to appear on the balance sheet, much less study along these lines would have ensued. One has only to stop to review the direction of the study given to stoppages from naphthalene and degraded tar to realize that much of this study could profitably have been put on the primary consideration of avoiding their formation.

In sketchily treating this angle of the physical aspects of coal carbonization, no attempt has been made to record any close measurements nor to balance the component parts with the original coal. Rather have we tried to put in some semblance of logical form certain laws, the understanding of which in their relationship to each other might be useful in determining how gas coal should be retorted to produce the most economical total of saleable constituents.

New Members

GAS COMPANIES

Needles Gas & Electric Co.,
R. S. Masson, Pres.,
Los Angeles, Calif.

Peoples Gas Company,
M. H. Hardilek, Supt.,
Port Arthur, Texas.

Alton Gas & Electric Co.,
R. F. Allen, Genl. Mgr.,
Alton, Illinois.

MANUFACTURER COMPANIES

American Safety Lock Co.,
L. R. Davis, Sec.-Treas.,
Ardmore, Pa.

Gas Chemists' Handbook

(1922 Edition)

On another page of this issue we print a Distribution of the Sales to May 9, 1923, of the 1922 Edition of the Gas Chemists' Handbook. Some 300 of the Handbooks remain in stock and these are being exhausted more rapidly through orders of booksellers, industrial laboratories, etc., than by gas companies. If you haven't ordered your copy of the 1922 Edition,—get your order in now.

DISTRIBUTION OF SALES—GAS CHEMISTS' HANDBOOK (1922 Edition)
UP TO MAY 9, 1923

STATE	Gas Cos.	By-Product Coke Oven Companies	Manufr. Member Companies	Individuals (Consulting Engrs. etc.)	Public Service Comms.	Industrial Labs.	Libraries	Univ.	Book Sellers	Total
Alabama	3					2				5
Arizona										
Arkansas										
California	8		1			3	1	1	1	15
Colorado	7									7
Connecticut	8					1				9
Delaware										
Dist. of Columbia	1			3		1				5
Florida	3									3
Georgia	2									2
Idaho										
Illinois	16	2		2		3	1			24
Indiana	8	2	1	2						13
Iowa	19									19
Kansas	4			1						5
Kentucky	2									2
Louisiana	2									2
Maine	1									1
Maryland	4		1	2	1	1			1	10
Massachusetts	33	2	1	6			1	1	1	45
Michigan	21			5			2		2	30
Minnesota	4	2							1	7
Mississippi										
Missouri	5	1	1			2				9
Montana										
Nebraska	2						1			3
Nevada	1									1
New Hampshire	3				1					4
New Jersey	4	2	2	3	*1	3		1		16
New Mexico	1									1
New York	35	3	4	5		10		1	46	104
North Carolina	4									4
North Dakota								1		1
Ohio	3	2	1	3		4		1	1	15
Oklahoma	1									1
Oregon	2									2
Pennsylvania	19	3	1	3	1	10		2	3	42
Rhode Island	1								1	2
South Carolina	2					1				3
South Dakota	2									2
Tennessee	4						1			5
Texas	5						1			6
Utah	1			1						2
Vermont	1									1
Virginia	4									4
Washington	6									6
West Virginia	2	1				1		1		5
Wisconsin	15	1					1			17
Wyoming	1					1				2
Canada	6	1				2				9
Cuba	1									1
England	1			1					3	5
Scotland									2	2
Australia	2								20	22
Holland				1						1
Republic of Panama	3									3
Total	283	22	13	38	4	45	9	9	82	505

*City of Newark

TABLE 3. PURITY—CHEMICAL REQUIREMENTS

A. State Rules or Laws

(Abbreviations: S = sulphur; NH_3 = ammonia; H_2S = hydrogen sulphide or "sulphuretted hydrogen")

State	Hydrogen sulphide			Tests for S and NH_3 Required of Company		
	Limit	Required Frequency of test	Maximum Sulphur Allowed	Maximum Ammonia Allowed	Minimum volume of annual sales Above Which Test is Required[1]	Specified Frequency of Test
			Grains/100 cu. ft.	Grains/100 cu. ft.	Millions cu. ft.	
Arizona	Trace	——	30	——	——	——
California	Trace[2]	Daily	30	5	100	Regularly
Colorado	Trace[2]	Daily	30	5	75	Regularly
Connecticut	Trace[2]	Daily	30	5	100	At least monthly
District of Columbia	Not show presence[2]	——	[3]30	[3]5	——	——
Illinois	1 grain per 100 cu. ft.[4]	Daily	30	——	50	At least weekly[5]
Indiana	Trace[2]	Daily	30	5	100	At least weekly
Maine	Trace[2]	Daily	30	5	70	Regularly, preferably semi-monthly
Maryland	Trace[2]	Daily	30	10	100	Regularly
Massachusetts[6]	Must be absent	Twice a year or oftener, as board determines	30	10	——	Twice a year or oftener, as board determines
Missouri[7]	Trace[2]	Daily	30	5	50	Regularly
Montana	Trace[2]	Daily	30	5	100	Regularly, preferably semi-monthly
Nevada	Trace	——	30	——	——	——
New Hampshire	Trace[2]	Daily	30	10	——	——
New Jersey	Trace	——	30	——	——	——
New York	Must be absent[8]	——	30	10	——	——
Principal cities (See municipal table)	Trace[2]	Daily	30	5	——	——
North Carolina	Trace[2]	Daily	30	5	100	Periodically, preferably semi-monthly
North Dakota	Trace[2]	Daily	30	——	——	——
Oregon	Must be absent[2]	Daily	25	5	——	——
Pennsylvania	——	——	30	——	——	——
South Carolina	Trace[2]	Daily	30	5	100	Periodically, preferably semi-monthly
Washington	Trace	——	30	5	——	——
Wisconsin	Trace	——	30	——	——	——

1. Requirements as to apparatus and tests for determination of ammonia do not apply in any State to companies making only water gas or oil gas or a mixture of these; in Illinois it does not apply to any gas companies.

2. The manner of testing for hydrogen sulphide which is specified in the rules follows closely the standard method recommended by the Bureau of Standards in Circular 32, "Standards for Gas Service."

3. As tested at any of the commission's testing stations.

4. Test for hydrogen sulphide in Illinois is to be by method recommended, which is somewhat more severe than Bureau of Standards method or by any other method approved by the commission. Hydrogen sulphide test papers are to be kept one year, available to the commission.

5. No tests for ammonia required; records of sulphur tests to be kept.

6. In Massachusetts a company whose gas on three consecutive inspections or on three inspections made within a period of 30 consecutive days is found to be below the standard purity requirements is liable to a forfeiture of $100, unless excused by board.

7. In Missouri records of all tests for impurities are to be kept at least two years, available for inspection.

8. Hydrogen sulphide test specified for New York State is less severe than Bureau of Standards' method.

Technical Problems Before the Industry

RECENTLY the Managing Committee of the Technical Section was requested to make a canvass of its members as to the six most important technical problems confronting the gas industry. This vote was taken for the purpose of considering to what fields of investigation or research the industry might most profitably devote its efforts at this time.

The ballot brought out so many suggestions from different sections of the country that it was decided to publish the following list of those submitted to show the technical men of the industry the trend of thought in their field. The first six subjects in the following list received the most votes, but the Managing Committee would appreciate comment from our members as to their opinion of the relative importance of any of the suggestions in the list or any additional technical problems which they consider should be included for consideration:

Summary of Subjects Suggested by Managing Committee Members as the Six Most Important Technical Problems

1. "The making of the cheapest gas, including manufacturing and investment cost per B.t.u. This would involve consideration of complete gasification of materials at the works. It would entail investigation of the cost of distributing gases of lower B.t.u. than customarily sent out and also the application of lower calorific gases to domestic and industrial use."

The above problem either in part or whole and in different aspects was mentioned by all of the members submitting suggestions. Typical wordings on such suggestions are:—

A continuous process for gas production which will not leave coke as a by-product.

Cheaper manufacturing cost and investment per million B.t.u.

Carbonization and complete gasification of coal.

Complete gasification particularly in a process using bituminous coal in an ordinary producer introducing 90% oxygen mixture and steam. This would produce gas with relatively low amount of inerts.

To manufacture a gas of such standard which will be most economical to gas company and the consumer.

One member analyzed this problem in the following four suggestions:

First—determine the true economic heating value of gas as determined by the manufacturing and distribution costs on the one hand and the consumers' standpoint on the other.

Second—to carry out the economic ideal in the first problem to what extent will be involved the question of the relation of capital invested to the partial or total replacement of present apparatus.

Third—Can B.t.u's as gas be delivered to the consumer more cheaply for heating than B.t.u.'s as coke?

Fourth—Is complete gasification of coal the true economic method of coal carbonization?

2. "Adoption of flexible standards for gas, to permit in each locality use of the most economical gas making materials and processes."

The above is closely related to the first suggestion and was combined by a number of the members with the problem of the most economic gas for distribution. With few exceptions it was mentioned by all members.

3. "The effecting of cheap and perfect purification of gas. Especial phases of this are the removal of organic sulphur compounds, the production of which may at times assume special im-

portance because of high sulphur content either of coal or oil; second, causes and prevention of the deposition of gums in pipes and meters, which should involve an investigation of the economic losses entailed by the distribution of gas containing oxygen with reference to gum formation and corrosion; third, removal of cyanogen or other compounds having a specially injurious effect upon works and distribution equipment,—particularly consumers' meters."

Five other members mentioned this suggestion using somewhat different phraseology such as:—

Removal of sulphur other than H_2S from gas.

Inexpensive method to completely remove sulphur from gas without oxide.

—Particularly in reference to liquid purification.

—Cheap removal of carbon bisulphide from gases made from high sulphur coal and low gravity high sulphur oil, etc.

4. "Coal carbonization research as to its effect on gas, oil, tar, ammonia and type of coke,—yields from various coals with varying oxygen content. Effect of temperature used and effect on method of carbonization, that is, whether gas is made to travel against the heat flow into coal or whether the gas travels in the direction of the heat flow; in other words, does the gas travel toward the coke already made in carbonizing or through the uncarbonized coal."

5. "Development of rates with ample fixed charges—demand and customer charges and low commodity charge."

Suggested by several members—by some particularly tied in with the development of industrial business.

6. "Cheaper distribution investment per unit of sales."

Other wording of this suggestion:—

Cost of high pressure distribution in rural communities.

How to supply suburban districts without too great an investment or pumping costs.

7. "Causes and prevention of the deposition of gums in pipes and meters. An investigation of the economic losses entailed by the distribution of gas containing oxygen—with reference to gum formation and corrosion."

The latter part of the above was given as a separate problem but is so related to the first, they have been combined. It was stated by another member as "The production of a finished gas which will cause no deposit—either solid or liquid—in mains or meters." Another member states—"Proper condensing and purification of gas, or proper preparation of gas at the manufacturing plant to rid the gas of those impurities which are causing so much trouble in the distribution systems and consumers' meters."

8. "Investigation of condensing, scrubbing and removal systems for gas plants with reference to:—

(a) Quality and quantity of tar
(b) Light oil
(c) Gum forming constituents
(d) Corrosive constituents
(e) Quality of gas
(f) Cost of gas

Other suggestions on this line were:—

Efficiency of scrubbing and washing apparatus related to removal of unsaturated hydrocarbons.

Effecting of best condensation and scrubbing of gas.

Tar recovery and elimination of emulsion troubles.

9. "Research on cupola foundry iron melting as to charging air quantities and pressures so as to utilize coke made in gas works to produce the most suitable coke in gas works for this work."

10. "Research on commercial meter diaphragms to either improve existing leather diaphragm, good leather for which is becoming scarce, or to find a substitute."

11. "The problem of developing industrial gas engineers and the education of such men in gas rates so as to be able to take on business which the industry has not yet developed. Such as, perhaps, winter househeating with a corresponding use of gas in the summer, possibly in steam boilers about the city for power production during summer months."

Other suggestions referred to utilization of gas generally for industrial purposes and househeating.

12. "Investigation of cracking and carburetion in water gas generators, with particular relation to effect of temperature, time of contact, kind of oil and production of gum forming constituents. Under this would come:—

(a) Checker brick spacing
(b) Tests of oil sprays
(c) Effect of carbon on checker brick"

13. "Investigation of the gas and coke producing properties of the coals of the U. S. in various types of gas making processes.

(a) Effect of size of coal
(b) Effect of temperature and time of carbonization
(c) Effect of coal mixtures

"Investigation to be carried on in full size experimental units of various types similar to work now supported at Ohio State University."

14. "Using a gas as fuel for heating carbonization units above a certain size from an economical point of view."

Stated also as:—

Producer gas operation as applied to carbonizing equipment.

15. "Research on gas oils in the fuel oil category, with a view to determining the operating methods for the best results obtainable."

16. "Analysis of ash in coke to determine relation between fusing point and iron content formation."

Stated also as:—

Effect of fusing point of ash in coal in the action of coke in household furnaces.

17. "Study of action of hydro-cyanic acid in gas in corrosion of iron vessels—with determination of minimum quantity which should be allowed and a practical method of controlling it."

18. "The ascertaining of proper constituency and preparation of refractory materials which will satisfactorily stand temperature load and erosion requirements for the various uses,—particularly in connection with water gas generators."

19. "The improving of the consumers' meters with respect to both accuracy and life."

20. "Development of a market for by-products."

21. "Comparative gas production data—with particular reference to standardizing methods of computing costs of coal gas, water gas, and mixed gas up to the holder."

22. "Use of gas as fuel both for steam and electric power and the biggest problem to be solved—some means of househeating that would compete with coal."

23. "The economic reclamation and conservation of waste materials and heat including satisfactory operation of waste heat boilers where plants are located in residential districts."

24. "Investigate fully possibilities from steaming in the interest of cheaper production."

25. "Stabilize prices of commodities used for gas manufacture."

26. "What work and opportunity has the gas industry to offer to the young graduate engineer?"

27. "Study of efficient methods for use of gas for home cooking."

28. "How to make best use of poorer gas coals."

29. "How to get along without gas oil."

30. "Experimental work on the production of uncarburetted water gas in water gas machines from various fuels."

31. "Development of the rating to a standard of coals from various seams, mines, localities, etc., to the end that the worth of coal can be expressed in money. The relative worth to be determined by tests and analyses taking into consideration quantity and quality of gas, coke and residuals."

32. "The standardization of appliances."

33. "Solution of the clinker problem in water gas production."

Other members suggested improved operation for preventing or improved design for removing clinkers.

Making removal of waste material

from generators automatic and continuous.

Development of practical apparatus for clinker removal in coal and water gas plants, etc.

34. "Study the burning of coke in domestic appliances with the idea of cooperating with manufacturers in design of heating equipment."

35. "The development of a small meter for measuring large volumes of gas."

36. "Eliminate the peaks on distribution systems, by eliminating high demand appliances or curtailing them by demand limiting meters."

37. "Investigate relative merits of various types of meters applicable for station meters, and large industrial users, and devise methods of proper calibration."

Committee on Standardization of Capacities of Consumers' Meters

To Each Company Member:

The Committee on Standardization of Capacities of Consumers' Meters has appointed a subcommittee on investigation of existing meter types. This subcommittee is composed of representatives from the meter manufacturers and from the six largest purchasers of "tin-case" gas meters. It will ascertain whether records are available from which to judge the past performance in service of the "A," "B" and "C" types. It will, from such records and (or) from the experience of its members, all of them thoroughly conversant with meter construction and repair, endeavor to standardize on one capacity for each case size now made, including the dimensions of the principal moving parts upon which capacity depends.

Suggestions of any kind are invited in connection with this work, and should be sent to the undersigned. Information is desired especially as to the maximum hourly consumption you believe will be demanded by the great majority of your consumers for (say) the next decade. For instance, at present, in cities where most families live in apartments with a common hot water supply, it is believed that 150 cubic feet per hour is sufficiently large. Do you believe, in your situation, 175 cubic feet would be better? If there is a sufficient demand for this latter capacity, such demand would furnish a valid economic reason for two different standard capacities in a 5-light case.

WALTON FORSTALL,
Chairman, Committee on Standardization
of Capacities of Consumers' Meters.

To Each Company Member:

Lack of standardization in the past has resulted in almost "57 varieties" of meters. The existence of these many varieties has forced the meter manufacturers in their capacity as meter repairers, to maintain an excessive stock of dies and repair parts of all kinds. Any proposed meter standard, in order to accomplish the desired benefit, both to user and maker, should include, as part of its program, as definite a schedule as possible for scrapping these now standard varieties. The order books of the manufacturers will, undoubtedly, show that some parts are called for but rarely, and yet the manufacturer does not feel at liberty to discontinue their supply. If the industry, speaking through the Association and after proper consideration, agrees on a series of dates after which various non-standard articles will not be supplied, the manufacturer will have his authority and a great step forward will be taken with no real hardship to any one. Also, in those instances where absolute scrapping of a part is inadvisable, the selling price of such a non-standard part would very properly be determined by the production cost.

This subject is brought to your attention at this time in pursuance of the Committee's policy to keep the membership in touch, through the "Monthly," with the progress toward meter standardization.

WALTON FORSTALL,
Chairman, Committee on Standardization
of Capacities of Consumers' Meters.

Employment Bureau

SERVICES REQUIRED

WANTED—Sales Engineer experienced in designing silica and fire clay Retort Benches and other furnaces. State experience and what acquaintance, if any, with the Gas Trade. Address A. G. A.
Key No. 013.

WANTED—A young technical graduate (about 22 to 27 years of age) for general Physical Testing and Research, by a large eastern gas company. Must have a good knowledge of general physics, particularly electrical measurements, and some gas works' experience. Should be able to plan and execute tests and research work, and prepare comprehensive reports thereon. An exclusively chemically educated man not wanted. Give full particulars in the first letter. Address A. G. A.
Key No. 015.

WANTED by a gas and electric company, young man to do office work who has had experience in ledger work, general routine work and especially on the complaint or service desk. In reply, please give outline of experience, references and salary expected. Address:
Key No. 022.

A GAS COMPANY situated in a medium sized semi-foreign city desires a live Commercial Manager. Must be familiar with domestic and industrial appliances and competent to handle a New Business Department. In reply, please state age, education, languages spoken other than English, if any, whether married, experience and references. Address: A. G. A.
Key No. 024.

WATER HEATER SALESMEN WANTED—A large gas company needs several good water heater salesmen to work on commission basis in Western Pennsylvania. Exceptionally good territory.
Key No. 026.

TECHNICAL GRADUATE—Wanted, a young technical graduate by a large Eastern Gas Company for newly organized industrial and house heating department. Excellent opportunity for advancement. Give full particulars in first letter.
Key No. 028.

WANTED—Man for Assistant Gas Superintendent. Water gas only. Approximately 7700 meters. Yearly send out 250,000,000 cu. ft. Should have technical training, as well as practical experience. Excellent opportunity for advancement. Cover details of experience as fully as possible in reply. Also give age and salary expected. Address A. G. A.
Key No. 030.

INDUSTRIAL SALESMAN—Wanted, Industrial and house heating salesman for Eastern Gas Company having an attractive gas rate. State experience and salary desired.
Key No. 029.

INDUSTRIAL SALES ENGINEER— Wanted, high grade industrial sales engineer with knowledge of house heating desirable, New England Gas Company having an attractive gas rate has need of such a man and requests applicants to give full particulars as to ability, experience and salary desired.
Key No. 027.

WANTED—Foreman for main laying gang. Must be experienced in laying 4" to 12" cast iron main and able to handle main repair work on low and medium pressure lines. Location, New Jersey coast. State age, experience and wages expected. Address A. G. A.
Key No. 031.

SERVICES OFFERED

WANTED—Position as superintendent or assistant with gas company or any connection where services of a chemical and gas engineer are needed. Experienced. Graduate 1917. Plant design, construction, operation and development. Maintenance. Last position plant superintendent. References, previous employers. 31 years of age. Address A. G. A.
Key No. 162.

WANTED—Position by a man of large general experience in gas business who has made a special study of sales promotion problems, and who would prove valuable as an assistant to a busy executive in any department. Address A. G. A.
Key No. 134.

WANTED—Position of responsibility as Manager or Industrial Fuel Engineer—18 years varied experience in the gas business. References and service record furnished. Address A. G. A.
Key No. 142.

POSITION WANTED—By-Product, Coke-Oven Executive seeks more responsible connection. Fitted for Chief Chemical Engineer. Assistant-Superintendent or Assistant to Manager. University Graduate. Alexander Hamilton Institute Graduate. Nearly seven years with present 3000 ton plant. Thirty-two years old. Married. Address A. G. A.
Key No. 151.

YOUNG MAN 27 years of age, seven years' experience with president of combination gas, electric, and street railway property, town of 40,000 people, desires new connection. Thoroughly experienced in the handling of correspondence and the compilation of financial, statistical and operating reports and statements, as well as the general work in connection with public utility corporations. Address A. G. A.
Key No. 153.

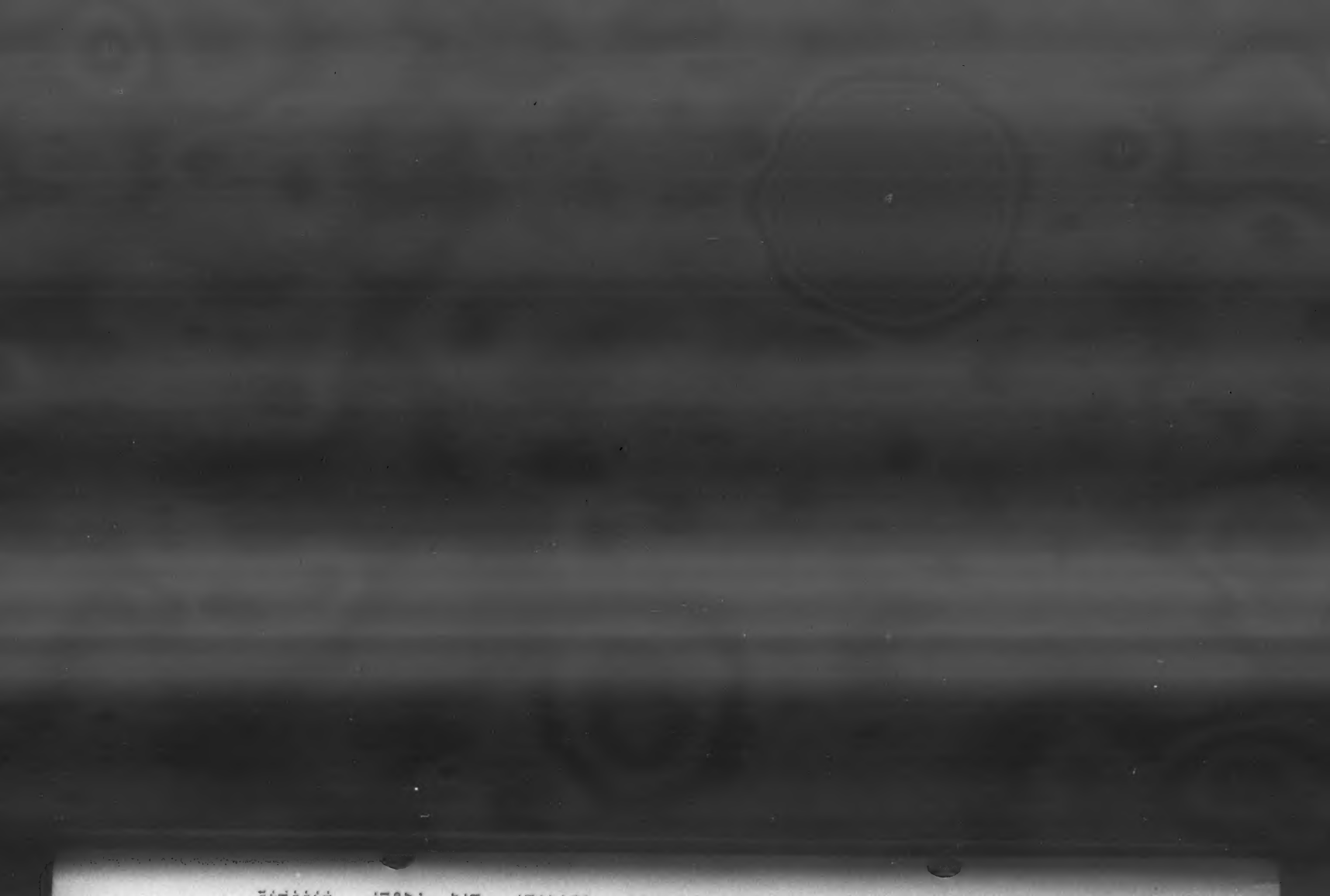
WANTED—Am open for a position of greater responsibility. At present manager of gas company in city of over 5000 gas consumers. Experience consists of four years as manager and eleven years in operating, construction and distribution. Age 39, married. Address A. G. A.
Key No. 157.

WANTED—Experienced gas man would connect with a going company in managerial capacity. Can report with reasonable notice. No choice as to location. Address A. G. A.
Key No. 156.

ENG.-SUPT. of one of the largest gas plants in the country would consider change. Desires to locate with company in which opportunities for future advancement are better than in present position. Is a married man. Has technical University training. No particular preference as to location. Address A. G. A.
Key No. 159.

WANTED—Position as manager of small gas plant (about 10,000 meters) or sales manager of larger plant. Can furnish the very best reference.
Key No. 158.

WANTED—To locate with gas company or combination gas and electric company, large or small, in the capacity of manager or superintendent. At present manager of Eastern company, possessed of wide experience operating, exceptional ability, unimpeachable character and pleasing personality. New Jersey or Delaware preferred, an interview will be agreeable. Address A. G. A.
Key No. 161.



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